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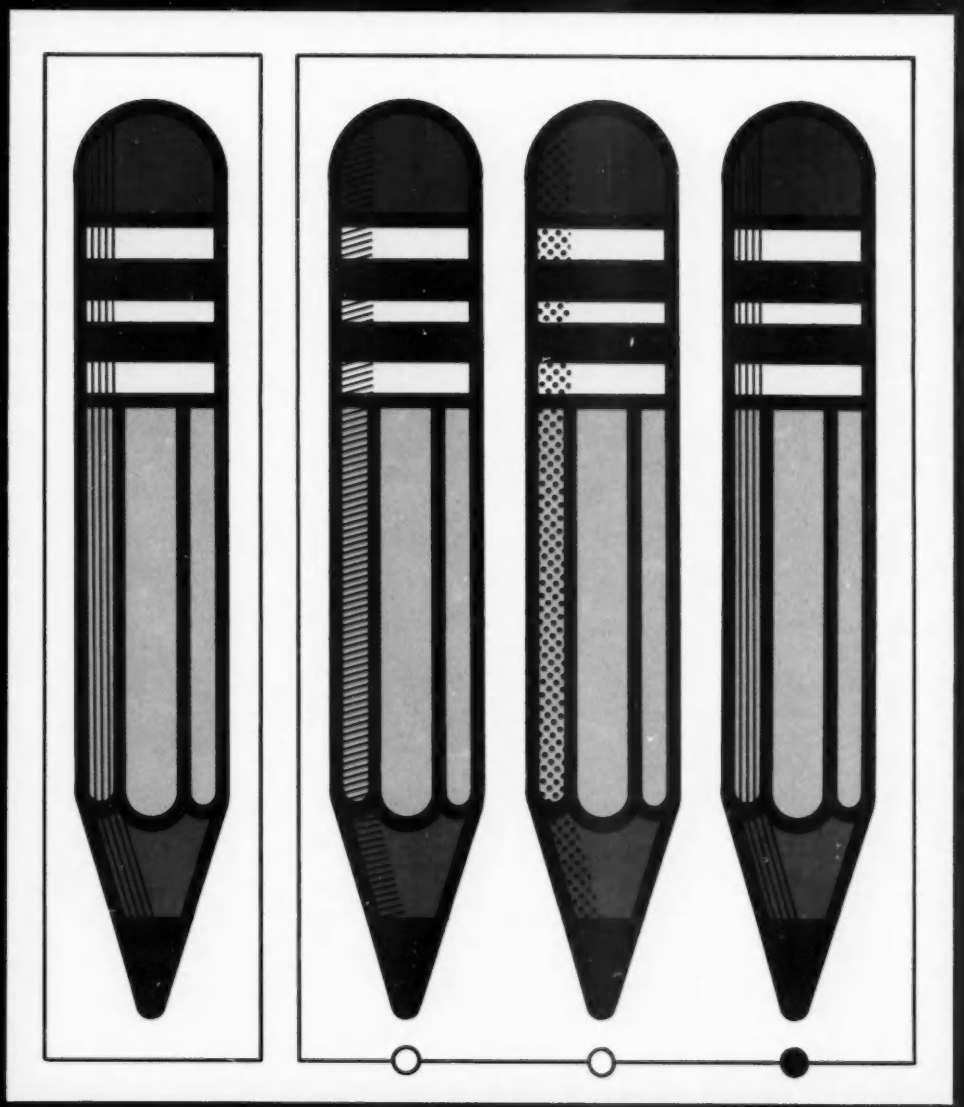
U.S. DEPARTMENT OF LABOR
MANPOWER ADMINISTRATION



TESTING WITHOUT READING

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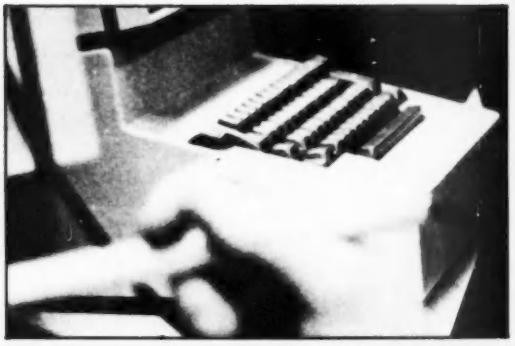

Job Tests: Outfoxing Outlawed

In Aesop's fable of the fox and the stork, the fox offered the stork dinner in a shallow dish. The fox readily lapped up the meal, but the stork's long bill kept him from getting a single mouthful. He was as hungry at the end of dinner as he was at the start. This fable was used by Chief Justice of the U.S. Supreme Court, Warren E. Burger, in delivering the opinion of the Court on employers' tests.

"Congress has now provided that tests or criteria for employment or promotion may not provide equality of opportunity only in the sense of the fabled offer of milk to the stork and the fox," the Chief Justice wrote. "On the contrary, Congress has now required that the posture and condition of the jobseeker be taken into account. It has—to resort again to the fable—provided that the vessel in which the milk is proffered be one all seekers can use."

For a report on the results of years of effort by the U.S. Training and Employment Service to develop an aptitude test for employment that is fair even to those who cannot read see *Testing Without Reading* in this issue of MANPOWER.

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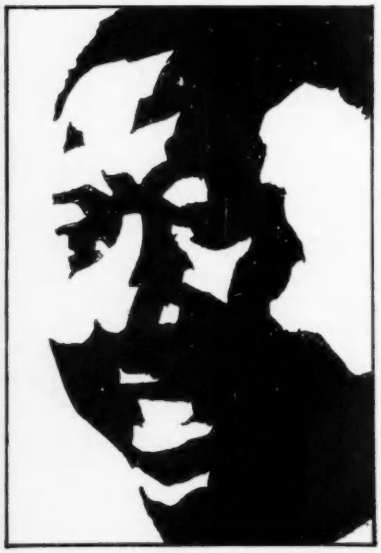

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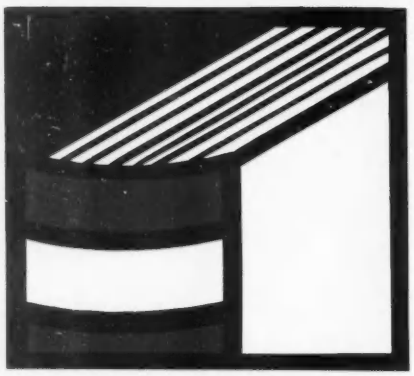
Teacher Training Takes to The Road



Mobile Van, Computers Add Convenience And Quality to Continuing Education

By PHYLLIS E. LEHMANN

There are bookmobiles, cribmobiles, and heartmobiles. Now even the college classroom has been put on wheels to bring updated instruction to teachers in Appalachia who cannot conveniently return to campus.

This traveling classroom is a far cry from the typical lecture hall. It offers private tutoring for every student at hours convenient to his personal schedule. Furthermore, the teacher never tires, even though over an 8-week period some 150 students are guided through a course at their own individual paces.

A unique innovation that combines traditional education with new technology, the classroom on wheels is actually a mobile van equipped for computer-assisted instruction (CAI). Operated by The Pennsylvania State University under a grant from the U.S. Office of Education, the van is traveling through rural Pennsylvania, parking in schoolyards, and offering local teachers a course in special education that will enable them to recognize and help children in regular classrooms who have handicaps that often go undetected.

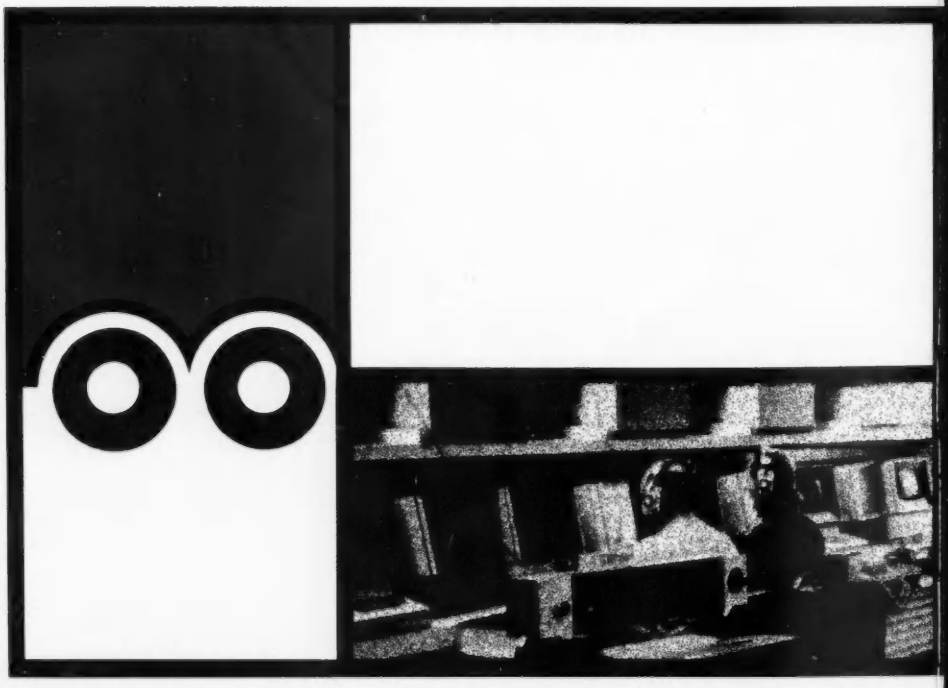
By July 1972, more than 2,100 teachers in 12 Pennsylvania towns will have completed the course, known appropriately as CARE (Computer-Assisted Remedial Education). In addition to updating their skills, the teachers will receive three academic credits from Penn State, which for many will count toward a permanent teaching certificate and an advanced degree.

The van is equipped with a central IBM computer instructional system with 15 student terminals. When the student signs on at his terminal, he is confronted with a multimedia happening. The computer "lectures" by displaying information on a cathode ray screen directly in front of him. At the same time, the student sees additional information projected on a small screen to the left of the central one and hears recorded explanations through earphones.

He can also refer to his course handbook which contains a glossary and reference material to supplement what he sees and hears. At frequent intervals, the computer asks questions which the student answers by touching the appropriate place on the screen with a special light sensitive pen or by typing out responses on a typewriter-like keyboard.

With all this going on, the student has little time to daydream or doze off. And the computer is a patient teacher. When

Mrs. Lehmann is a freelance writer.



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questions are answered incorrectly, it reviews the information until the student has mastered it. Thus, the course can take from 20 to 70 hours to complete, depending on individual capability, although the average is about 30 hours.

Teachers feel they learn as well as or better than they do from a human instructor in the traditional classroom setting. Said one first-grade teacher, who admitted this was quite a new-fangled device "for an old lady like me":

"You see it, you read it, you hear it, and it's all reviewed. You should learn something! Also, your attention doesn't wander."

Van Has Great Possibilities

Dr. Harold E. Mitzel, head of the project and assistant dean for research in Penn State's College of Eduction, points out that the middle-aged group of teachers at whom the project is aimed often feels more comfortable with the computer than in the regular classroom. "Some people who have been teaching for many years are shy of showing their ignorance to their peers in a classroom setting," he said. "With this setup, there is a welcome anonymity."

A pioneer in the relatively new field of computer-assisted instruction research (it dates from about 1959), Dr. Mitzel, with the help of colleagues in Penn State's Computer-Assisted Instruction Laboratory, has already applied the new teaching method in training Navy men to detect malaria, in teaching math to inner-city youngsters in Pittsburgh and Philadelphia, and in helping young people choose an occupation.

Many other universities are investigating the practical applications of CAI, but so far no one else has put it on wheels. This is an innovation which the Penn State group sees as having almost limitless possibilities—ranging from education for American Indian children in isolated western schools to courses in scientific methods of firefighting for volunteer firemen in the Nation's small towns.

The idea of mobile computer-assisted instruction came to Dr. Mitzel in 1967 when he was unable to get reduced telephone rates for transmitting information from a central computer to remote locations. At the time he was vice president of the board of the Appalachian Educational Laboratory, so he consulted AEL's director, Dr. Benjamin Carmichael, about putting his idea into practice.

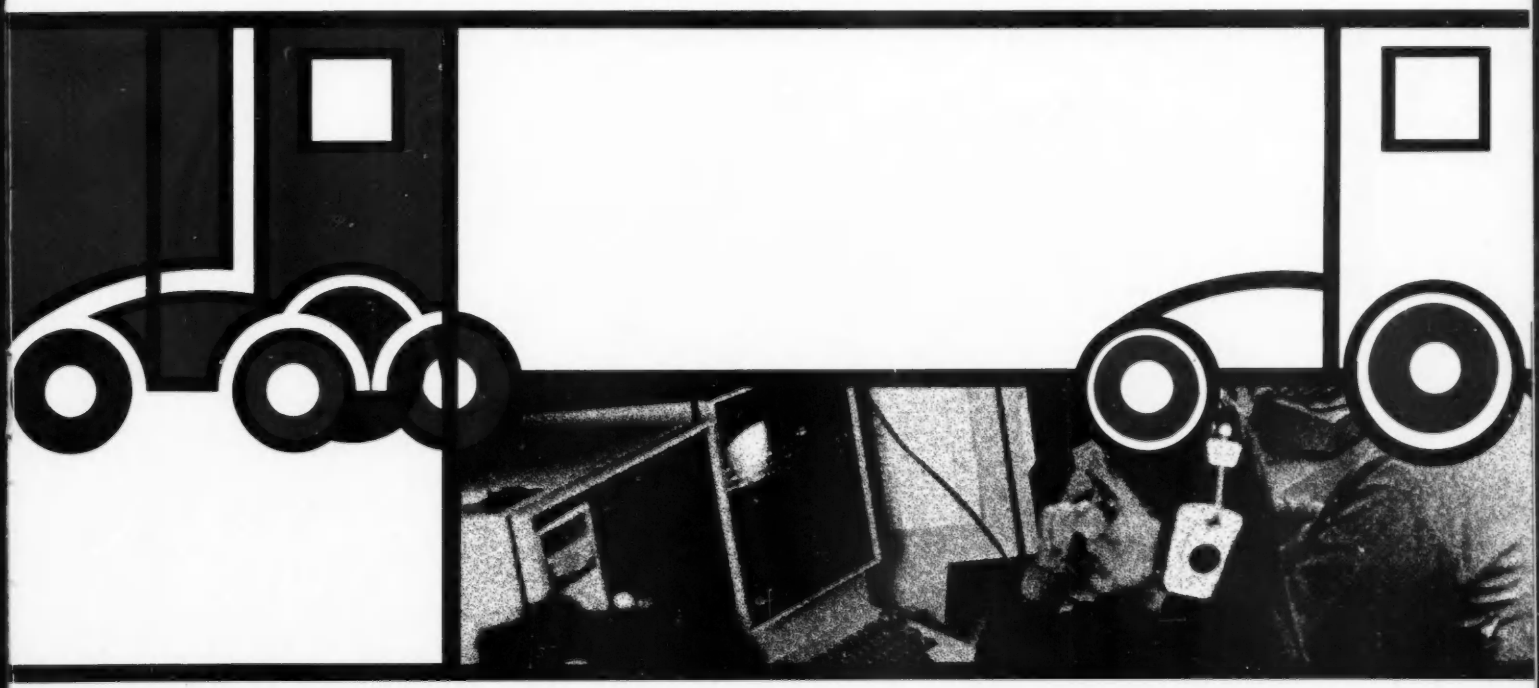
The Appalachian Educational Laboratory is one of an original 20 regional laboratories established by Congress through the Elementary and Secondary Education Act to transform research information into new educational methods, practices, or equipment. Currently, there are 11 such labs across the country, with AEL serving the Appalachian area that extends from lower New York through northeastern Mississippi.

Course in New Math

It was the task of Dr. Carmichael and the AEL staff to sell the computer-assisted instruction idea to public school people in Appalachia and to pool State and Federal funds for an initial project. Meanwhile, the staff of Penn State's CAI Lab was devising a computer-taught course in modern math—often called the new math—for elementary school teachers.

By March 1969, teachers in Dryden, Va., a mining town of 400, were trying out computer-assisted instruction. Because project developers were unable to find sufficient funds to build a mobile van, the IBM instructional system was installed in private data processing facilities in Dryden.

After 8 weeks, the system was packed up and moved to an elementary school in Gladeville, a slightly larger Virginia town some 250 miles away. In the summer, the system was transferred to a school in California, Pa., where another group of teachers took the course. At the



Teacher *continued*

three sites, the project served a total of 387 teachers, three-quarters of them wives and mothers who could not conveniently leave their homes and families to attend college classes or summer institutes.

There are countless isolated areas throughout Appalachia where the need for quality education for in-service teachers is acute. In the southwestern part of Virginia around Dryden and Gladeville, for example, some one-room schools are still in use and school officials faced with teacher shortages are forced to hire some people who do not have college degrees. In many cases, preservice teacher education is not the best, and there is a serious lack of qualified instructors to teach extension courses.

As Dr. Carmichael of AEL says, "Under any scheme I know there is no adequate way of meeting the needs of all the teachers. It is fiscally impossible to get enough college courses and enough college instructors to reach elementary school teachers and especially to get enough to provide specialized training in things like the new math." He believes, however, that mobile computer-assisted instruction could be one important answer to the problem.

Dryden High School principal, Charles Cox, credits the CAI project with awakening both teachers and parents to the need for updating teachers' skills. He also points out that the project was instrumental in dispelling people's fear and mistrust of automation, and he believes that such technological teaching methods could play a large role in his area for training not only teachers but also school dropouts and the 80 percent of high school graduates who do not go on to college.

Unit Requires Small Staff

Assured by the pilot project that mobile computer-assisted instruction could work well, the Penn State team set about developing the special education course, this time for teachers in their home State. The university provided funds to build a van 40 feet long and 8 feet wide that could easily be moved from one location to another and expanded to a width of 18 feet when set up for business. The van itself could run for some 30 years, Dr. Mitzel believes, although the sophisticated equipment inside would have to be replaced more frequently.

Considering the number of teachers who can be served, the unit requires a small staff. A systems manager travels around the State with the van and at each stop hires a systems operator to help keep the equipment working smoothly and two proctors to help teachers schedule their sessions and get set up for each lesson.

The cost of a year's operation is approximately $250,000. This may sound like prohibitively expensive teacher training, but Penn State experts stress that the computer course is less costly than other methods of quality, instruction. Dr. Keith Hall, assistant project director and head of Penn State's CAI Lab pointed out:

"We're actually providing a private tutor for each of the people enrolled. The course averages 30 hours per student, and with 145 persons enrolled, this would amount to some 4,350 clock hours of tutor time. Tutors often get $10 an hour, so the cost for the course taught by private tutors would be $43,500 for just one location. Multiply that by seven locations, which is the number we plan to schedule after the first year, and you come out with more than $300,000 a year."

According to Dr. Mitzel, the most comparable way of training teachers is in 6-week summer Federal institutes, which bring teachers to college campuses and pay them stipends. The mobile CAI project, he maintains, is considerably cheaper.

Parked in front of Ridgway High School in northwestern Pennsylvania, the van is available to teachers taking the computer-assisted course almost any time they find time to use it. The extensions on each side of the van are folded in when the vehicle is in transit.

Computer-assisted instruction in the Penn State mobile van is a multi-media happening for these Ridgway, Pa., teachers.

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Institute costs run to some $200 per credit, twice as much as the cost per credit for the CAI course.

Funding for the current project, which will run until mid-1973, comes from the U.S. Office of Education. Development of the special education course itself was financed by the Bureau of Education for the Handicapped. Actual operation of the project is funded by the Bureau of Educational Personnel Development, whose Special Education Branch was the first Federal office established specifically to fund projects which train teachers to identify and teach handicapped children in regular classrooms.

Project developers believe their classroom on wheels is as innovative for the quality of instruction it provides as for its teaching methods. The caliber of professionals who prepared the course is far higher than that of the average instructor teaching evening classes in small towns, simply because it is difficult to attract top-notch faculty members to outlying areas. Furthermore, while only 15 or 20 teachers can enroll in a traditional 16-week continuing education class, some 300 teachers can complete the course offered in the mobile van during the same period.

Flexibility is the key, both in terms of efficiency and convenience. Instead of being tied to a rigid schedule of a 2- or 3-hour class 1 night a week, teachers can schedule their lessons from immediately after school till 11 p.m. on weekdays and nearly all day Saturdays and Sundays. Two school superintendents have allowed teachers to use their free period during the day to visit the van for a lesson. Such flexibility, of course, is a boon to teachers who are working wives and mothers and whose schedules are normally hectic. To assure that each teacher will have time to complete the course at his own speed, the staff closely monitors scheduling.

The Pennsylvania project got underway in October 1970, in Clearfield, a town about 40 miles from the University, where 101 of 115 enrolled teachers completed the course. The mobile van was not ready until the system was moved in January to Ridgway, located in a mining area, where 138 of 145 enrollees completed the course.

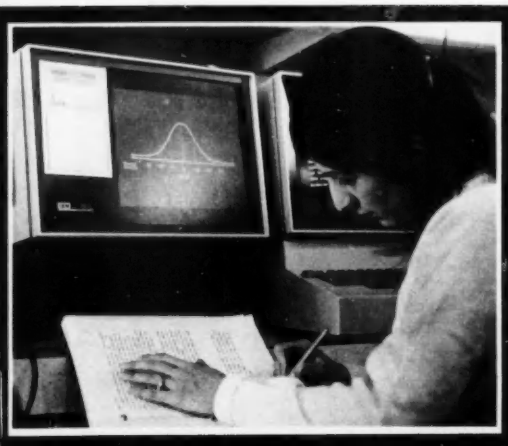
Handicaps Go Unnoticed

From Ridgway, the van is moving across the State, and will stop at three more towns in the northern tier counties before winding up its first school year in August. On the second leg of its journey in 1971-72, the van will stop at seven locations in the coal regions of southwestern Pennsylvania. The third year's schedule has not yet been planned.

Enthusiasm runs high in towns along the van's route. Not only elementary school teachers, but also vocational school teachers and school administrators are signing up to take the special education course. Some drive as long as 1 hour each way to attend a session. At Ridgway, the teacher of a high school class in problems of democracy was so impressed with the course that he scheduled his seniors for the chapter on the culturally disadvantaged.

The special education course was chosen over other subjects as the van's first offering because it can help bridge a crucial training gap. Dr. G. Phillip Cartwright, a Penn State associate professor of special education who developed the course, points out that the Nation is lagging seriously in preparing people to aid the handicapped. He cites U.S. Department of Health, Education, and Welfare (HEW) estimates showing some 3.7 million handicapped children who are not getting the education services they need. There are 200,000 handicapped children in Pennsylvania alone.

Although HEW has ctied a need for almost 300,000 more specially trained people to work with the handicapped, Dr. Cartwright notes that the United States produces only 2,000 to 4,000 new



A link with traditional teaching techniques, a course handbook supplements the computer's "lectures" on how to recognize and help handicapped children.

Proctors hired at each stop help teachers get set up at their terminals.

Teacher *continued*

specialists each year. He believes the CAI course may represent a new approach to training—one that focuses on an existing professional group rather than on training new specialists.

Nationwide, at least 60 percent of all handicapped children are in regular classrooms, according to HEW. Many of them have handicaps which are not easily recognized and consequently they receive no special help. They may be children who are mildly retarded, emotionally disturbed, hyperactive, culturally disadvantaged, and those with speech, hearing, and vision problems which can hinder learning.

The severely handicapped and retarded are recognized easily enough, but what about the unusually quiet boy in the corner of the classroom or the one who always seems to be daydreaming. Such behavior could be signs that these children cannot hear well. Or the girl who seems especially awkward may be bumping into the furniture because she cannot see well. The child who appears to be of low intelligence may simply have been slowed down by a culturally disadvantaged background.

The CAI course is designed to help teachers spot such problems by teaching them specific behavioral clues. The information is taught in separate chapters, as it would be in a college textbook, but the advantage of the CAI course is that material can be presented in several different ways. Through the audio equipment, for example, teachers actually hear examples of a handicapped child's speech and listen to a sample dialogue between a teacher and the parents of a handicapped child.

The very method of teaching used in the course may also have far-reaching effects. It is possible that the individual instruction the teachers get will encourage them to use the one-to-one approach more frequently with their students, particularly with handicapped children.

Because of CAI's flexibility and adaptability to so many fields and the growing demand for continuing education, the Penn State team is looking to the future. The van concept obviously works; now the problem is to develop courses to make full use of its potential. Already in the talking stage is another van that would visit hospitals to update the skills of health workers. Ultimately, assistant project director Hall envisions a fleet of 10 to 12 vans touring the State, offering courses to widely varying groups—borough officials, law enforcement and corrections personnel, prison inmates, adults preparing for high school equivalency examinations.

In education alone there is a tremendous need for continuing education. Dr. Mitzel recalls one teacher in the computer course who had not taken a college course since she graduated from a 2-year normal school (forerunner of the 4-year teachers' college) in 1922. He noted that while her case may be somewhat extreme, she is far from unique.

Teachers in Pennsylvania today must get a permanent certificate within 6 years after they begin teaching. To obtain it they must teach 3 years and acquire 24 credits beyond the bachelor's degree. Most teachers depend on evening extension classes for at least some of these additional credits. Of the 106,000 elementary school teachers now in Pennsylvania classrooms, about 40 percent have been teaching 5 years or less, and the majority of them are probably still working toward a permanent certificate. Mobile computer-assisted instruction could help meet this demand, especially in areas where there are not enough qualified instructors.

From all indications, any apprehensions about "machine teaching" are quickly dispelled after a brief encounter with the computer teacher. However, even though teachers may accept the mechanical wonder, they can still be baffled by it. Systems manager Bill Matson tells of one lady who was told when her teaching terminal broke down that she could move to another station. When the second terminal flashed the same part of the lesson on the screen, she stared at it in amazement. "Why, imagine that," she marveled, "this computer knows where I am, too!" □

Students answer the computer's questions by touching a special light-sensitive pen to the appropriate place on the screen.

Penn State professor G. Phillip Cartwright (left) explains the computer-assisted instruction equipment to university students.

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Testing Without Reading

By PATRICIA MARSHALL

Hello world! Here comes the NATB!

The NATB (pronounced nat-bee) is the newborn Nonreading Aptitude Test Battery, a series of tests designed by the U.S. Training and Employment Service (USTES) of the Manpower Administration for use with disadvantaged persons. The purpose of the battery is to test the occupational aptitudes of people who do poorly on standard vocational aptitude tests because of reading difficulties, or who cannot take such tests because they are unable to read at all.

The NATB requires no reading as all its questions and instructions are read by test administrators. The battery will be used by public employment agencies across the Nation as an aid in counseling disadvantaged persons on their vocational aptitudes for various kinds of training and jobs. It will also help break down discriminatory barriers in employment because it will uncover an individual's capabilities regardless of his lack of experience, education, or skill training.

Mrs. Marshall is assistant editor of MANPOWER.

Testing *continued*

This is an important function at a time when testing in general is the subject of much controversy. Complaints are often voiced that we are an overtested people who place too much reliance on test scores, with the result that tests have become our master instead of our servant. The strongest criticisms have been made by persons in minority groups who feel that often tests are built around the words and concepts of a middle-class culture and are grossly unfair to the disadvantaged.

The net effect, they contend, is that many tests have tended to bar the disadvantaged from better jobs and higher education and perpetuate their disadvantagement.

High Court Rules on Tests

In March, testing was an issue in a United States Supreme Court decision. The Court ruled 8 to 0 (Griggs vs. Duke Power Co.) that under the Civil Rights Act of 1964 employers may not use tests and other procedures that are "neutral on their face . . . if they operate to freeze the status quo of prior discriminatory practices."

The case in which the ruling was made involved an employer who instituted a policy after passage of the Civil Rights Act that persons wanting placement in any but its labor department must obtain satisfactory scores on an intelligence and a mechanical aptitude test given by the company. Neither test, the Court said, was intended to measure the ability to learn to do a particular job or category of jobs. Moreover, requisite scores were set so high that they would screen out about half of all the Nation's high school graduates.

Any test given by employers as a condition of employment or promotion must not operate as a "built-in headwind" for minority groups and must also have a demonstrable relationship to job performance, the Court said.

"Congress has not commanded that the less qualified be preferred over the better qualified simply because of minority origins," Chief Justice Burger stated. Rather than disparaging job qualifications as such, he said, Congress has made these the controlling factor so that race, religion, nationality, and sex become irrelevant. Employers' tests must measure the person for the job and not the person in the abstract, the Chief Justice said.

Measurement of an individual's capabilities for specific occupations and groups of occupations has long been the function of USTES testing. The new series of nonreading tests was adapted from the USTES General Aptitude Test Battery (GATB), which has been earning credentials for a quarter of a century as a measure of vocational abilities and prognosticator of vocational success. However, it became apparent in the past decade that low scores by disadvantaged persons taking the GATB were not meaningful because it was impossible to tell if they resulted from limited ability or from cultural limitations. Thus, the need for the NATB became apparent.

Neither test battery is available to employers. Rather, they are intended to be used chiefly by public employment offices (the GATB is also used for vocational counseling in schools) to test applicants for manpower training and referral to specific jobs.

The NATB includes some sections of the older battery—such as apparatus tests that do not require reading—but, for the most part, it consists of new or greatly simplified test formats intended to measure the same aptitudes as the GATB.

There are nine of these aptitudes: Intelligence; numerical, spatial, and verbal abilities; clerical and form perception; motor coordination; and finger and manual dexterity. These are most of the abilities isolated so far that have been found to be occupationally significant. Testing them in a battery rather than singly yields broad-gauged results which can be compared to the requirements for many different jobs.

Development Began in '63

NATB development began in 1963, the year after the Manpower Development and Training Act was passed, when manpower services to the disadvantaged were still largely in a formative stage. Constructing the tests was a complex, lengthy process. Test forms were chosen which would be suitable for the disadvantaged but would also bear a high relationship with their GATB counterparts so that the new battery could draw on much of the work that had gone into the earlier one. Items to include in the NATB tests were then researched, selected, and

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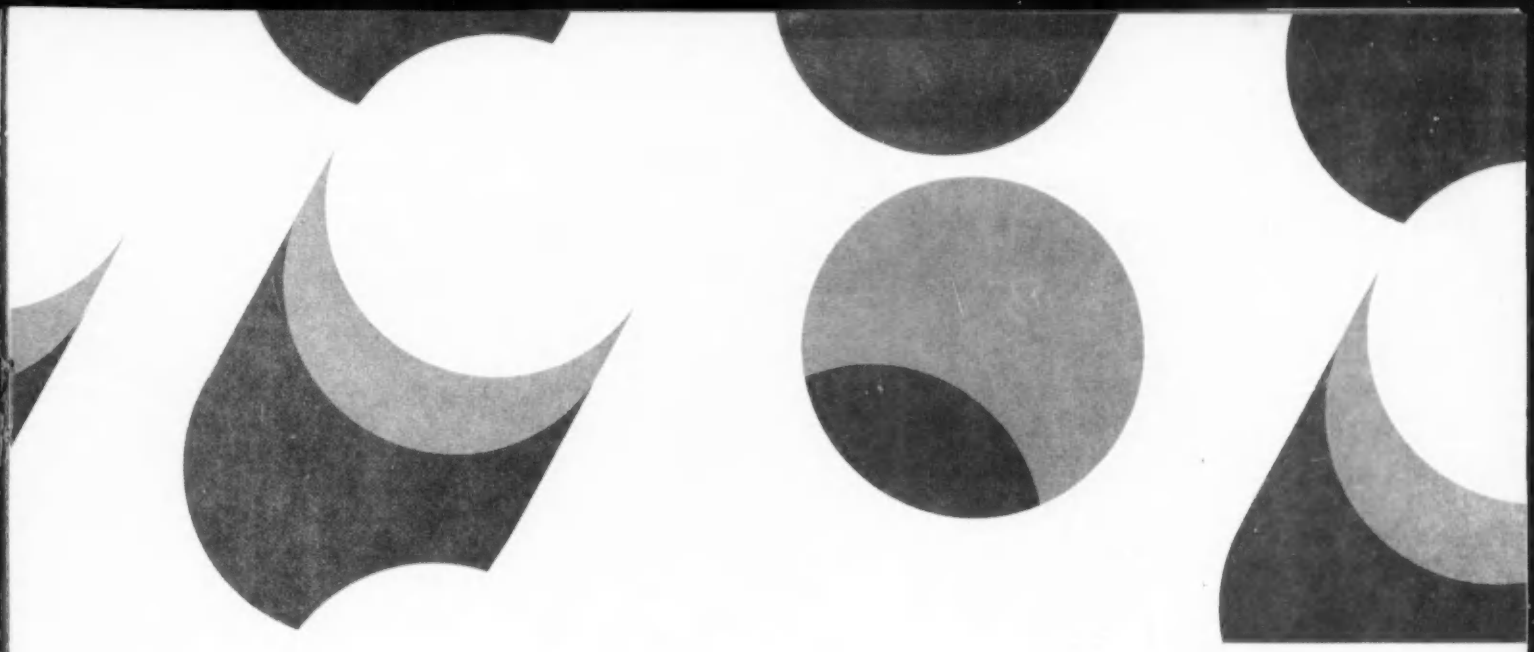


pruned, and directions were written for test administration. After preliminary editions of the tests were tried out, the tests' content and directions were revised to weed out any apparent deficiencies.

A significant contribution was made by State employment services. Test analysts in State agencies proposed ideas for test formats, and a number of agencies constructed tests. The Tennessee employment service built NATB's coin matching and coin series tests of numerical aptitude; Minnesota built the test to measure form perception; Pennsylvania, Utah, New York, North Carolina, and the USTES national office shaped other test forms.

Test ingredients were subjected to extensive analysis at various stages of development. Thousands of feet of computer printout for some of this research bear partial testimony to the scale of the job. Several studies were made to learn the relationship of the preliminary nonreading tests to the GATB aptitudes they were designed to measure. For these studies, persons with little education took both the new battery and the GATB. Disadvantaged persons in 17 States also helped by sampling what the experts had put together and providing them with valuable information on the adequacy of their test directions, administrative procedures, and time limits.

The GATB takes 2½ hours and measures abilities with 12 tests, while the NATB contains 14 tests and takes about 40 minutes longer, largely because extra time is allowed to give disadvantaged persons a detailed explanation of procedures before the start of each test.

Great care must be taken in use of the NATB. Some people who take the test undoubtedly will look upon it as a strategy adopted by an unfriendly world to keep them from getting anything but menial jobs. Others may connect tests with school, and feel defeated before they start. Such factors as fear, frustration, confusion, and uncertainty interfere with test performance and with attempts to get a true measure of vocational capabilities.

Standard Practices Crucial

Moreover, if NATB is to be a reliable battery it must be standardized in practice as well as in form. It must be administered in the same manner wherever it is given, and everyone being tested must get the same directions, have the same time limits and materials to work with, and have his test interpreted under the same rules. These factors, teamed with the special requirements in testing the disadvantaged, mean that proper installation of the new battery in public employment offices across the Nation is crucial to its effectiveness.

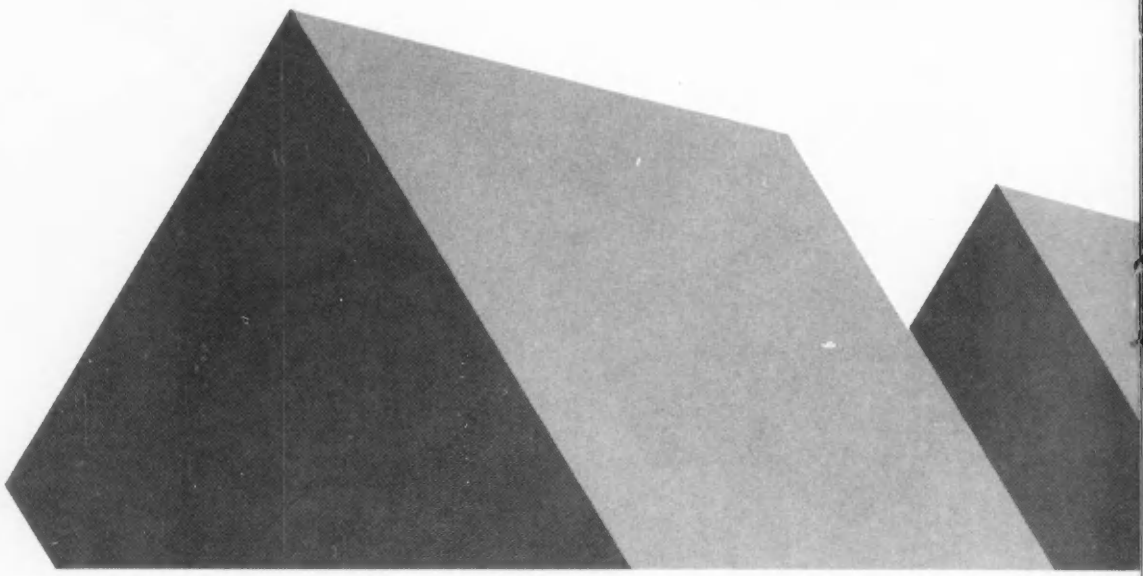
Training of some 4,000 test administrators and counselors is now underway in the 1,600 local public employment service offices across the Nation which have testing units. All of these offices will probably be ready to offer the new series by the end of this year.

To train test administrators and counselors, USTES has had audiovisual materials and instruction workbooks prepared. These will be used along with manuals which give a detailed description of the NATB's development, administration, scoring, and interpretation. State employment agencies are using these materials to train local office personnel.

Local offices will use the NATB only for disadvantaged persons whose limitations are too great to permit the GATB to give a fair assessment of their abilities. USTES has worked out a brief screening exercise with a few GATB test items to help counselors decide which test is most appropriate for individuals they are counseling.

Before taking the NATB, examinees will get a general orientation in how to take tests and how testing can help them get the training or job that best suits their abilities. Practice sessions also start off each NATB unit to help everyone understand what is expected of him in that particular section. If, in spite of these precautions, there are still some people who get confused, lose interest, or have other problems while testing is underway, test administrators will make a note of this to aid counselors in their interpretation of scores.

Instructions and questions for all tests are read aloud by the test administrators. In two tests borrowed from the GATB, pegs are placed and turned in a pegboard to measure manual dexterity; in two others from the same source, rivets and washers are assembled and taken apart to measure finger dexterity. All



Testing *continued*

other NATB units are paper and pencil tests, most of them offering as possible solutions to questions a series of pictures of familiar objects or abstract shapes. Examinees make a pencil mark near the object or shape they select as an answer, whereas in the GATB separate answer sheets are used.

The NATB is also a more money-loaded battery than its forebear. It contains coin matching and coin series tests to measure numerical aptitude, both unlike anything in the older series and both stating problems in terms of small U.S. coins—a money form likely to be somewhat more familiar to the disadvantaged than larger denominations.

Scores Related to Abilities

In a 42-question picture word matching test to measure intelligence and verbal ability, a decision must be made as to the picture best suiting descriptions read by the test administrator. A practice question asks which one of these items—a mountain, mirror, tree, cactus, or starfish—has a smooth surface.

An oral vocabulary unit measuring intelligence and verbal and numerical abilities has 45 pairs of words. For every pair that is read, persons being tested must decide whether the words mean the same thing, opposite things, or have neither the same nor the opposite meaning.

Design completion is a 29-item unit measuring intelligence and numerical aptitude. The test booklet shows a series of unfinished designs, each to be completed by selecting from five varying designs.

Other NATB units are tool matching and form matching, which measure form perception; three-dimensional space, which measures intelligence and spatial perception; name comparison, measuring clerical abilities; and mark making, measuring motor coordination. These units are all more or less similar to GATB counterparts.

When the test is completed an employment service counselor compares the individual's scores with those established as minimums in 62 occupational families whose members have similar aptitude patterns. This system, developed first for the GATB, makes possible a rapid check of test scores against requirements in 1,200 occupations. A selection is then made of the families whose ability requirements are met or exceeded by an individual's test scores.

Next, the counselor turns to a GATB manual containing the aptitude norms for specific occupations in these family groupings. Norms are based on USTES and State employment service studies of aptitudes for the jobs and the range of talent among workers in them. They are established only for the aptitudes that are found significant by job analysis and statistical analysis and set at a point that provides a good differentiation between good and poor workers. In effect, they become minimum ability requirements for the occupations. Tested individuals who fall below the norm for any of the key aptitudes in a particular kind of work may not be advised to enter it.

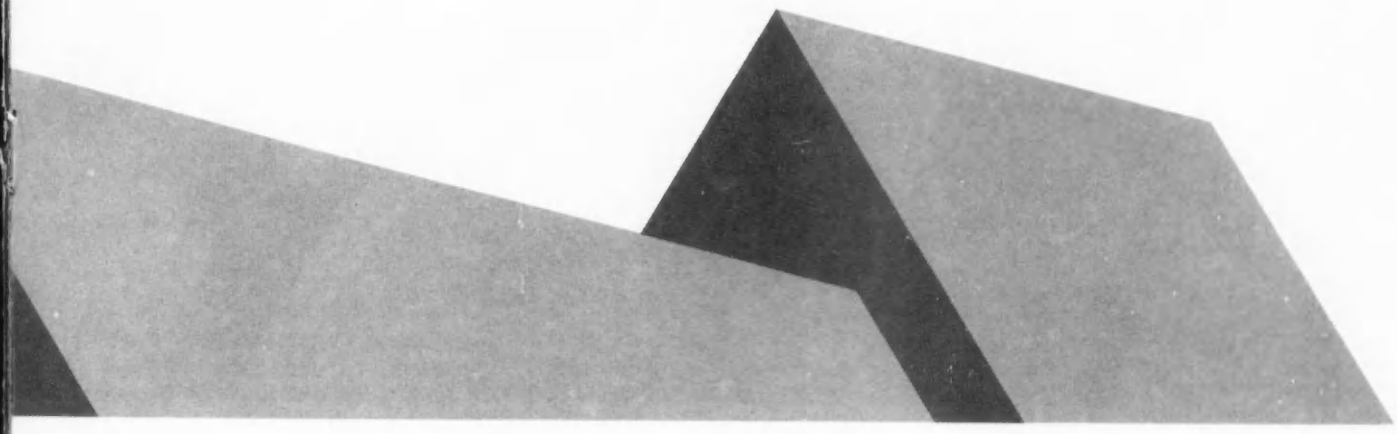
Tests—even the NATB and the GATB with their broad vocational assessments—have their limitations. With test results in hand, counselors have a useful tool to help people appraise certain capabilities; however, people cannot be shunted into specific kinds of work simply because test scores indicate they have good native abilities for them. Many other factors also must be considered in occupational selection, including skill requirements, individual interests, availability of jobs, and limiting physical handicaps. Counselors must also compare the important requirements in jobs for which the tested person is being considered with the key needs in jobs on which the aptitude norms are based—there may be important differences, even though job titles are identical.

New 'Literacy' Test Shaped

NATB test results may indicate that a person has the potential to acquire certain occupational skills, but his literacy level may be far short of what is needed if he is to take training where his abilities lie. His first step necessarily may be to learn how to read.

By the end of this year, USTES hopes to introduce its Basic Occupational Literacy Test (BOLT—not to be confused with the BOLT training course described in *Survival English Does the Job* in the December 1970 MANPOWER).

The BOLT will measure the basic reading and arithmetic skills of the dis-



advantaged. Unlike commercial tests of these skills, its contents are designed to interest adults rather than children. The BOLT also will be unique in its comparison of scores to occupational norms rather than simply to school grade levels. To do so, it will use the General Education Development (GED) ratings for the 21,741 separate occupations in the Manpower Administration's DICTIONARY OF OCCUPATIONAL TITLES. With the BOLT it will be possible to determine whether a disadvantaged person's reading and ciphering skills are adequate to absorb skill training or qualify for a certain type of work. It will also give him a fairly exact assessment of what he must learn to reach his job goals.

All this abilities measurement may seem excessive in view of present-day disenchantment with tests and with the uses to which many tests have been put. Professionals in the testing field are among the first to recognize that, although testing has come a long way, it still has a long way to go. Donald Super and John Crites in "Appraising Vocational Fitness by Means of Psychological Tests," a book widely used in counseling, have this to say about the present status of tests:

"The measuring instruments we now use even for the most adequately measured traits such as intelligence and vocational interest are still not completely understood; those we use for measuring personality traits such as general adjustment, introversion and the need for recognition are still in embryonic stages; and there are no methods of testing creative imagination, persistence, and certain other traits and abilities which are often assumed to be important and which laboratory studies and others types of investigation have suggested may actually exist."

However, the authors do not recommend that testing be discarded in favor of playing hunches or using other less exact strategies of the pretest era. Rather, they stress the need to use both testing and nontesting techniques in counseling to help people reach a realistic appraisal of their vocational prospects. The same authors say that the GATB has a distinguished history and is outstanding for the "unique extent" to which it has accumulated occupational norms and validity data. They call it the most adequately standardized and validated battery of tests now available for vocational counseling and placement.

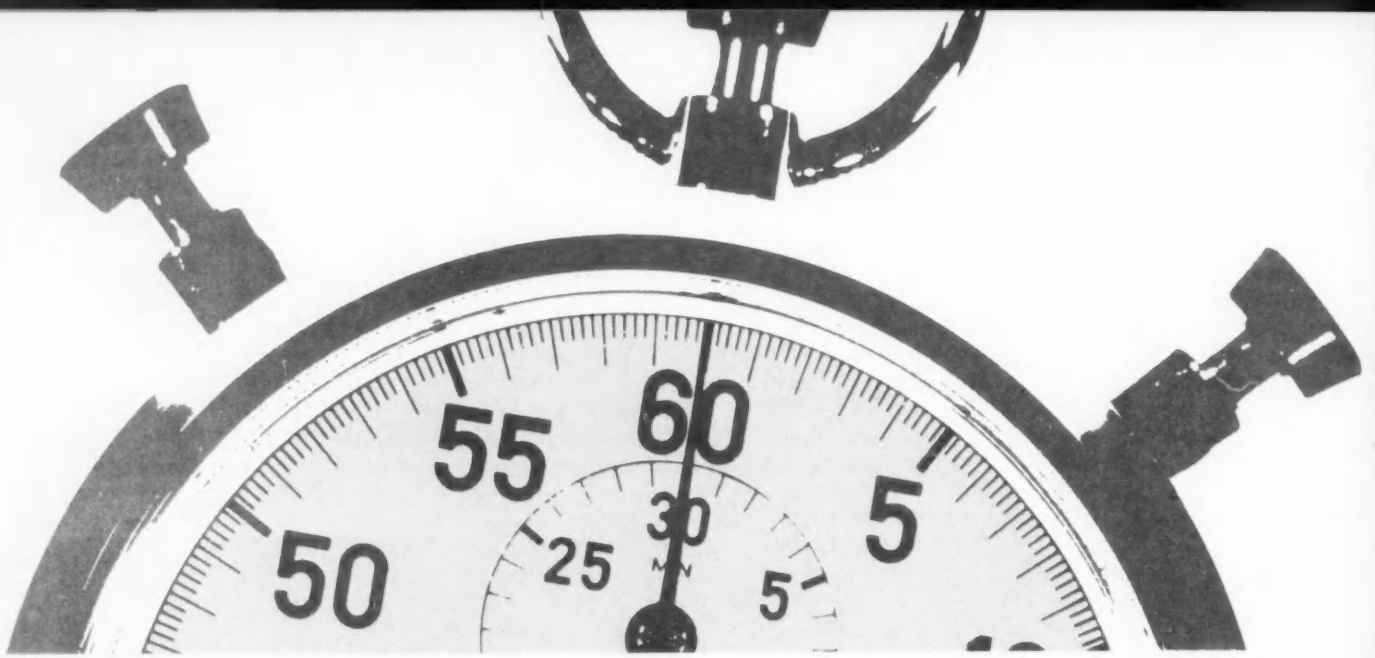
Little Testing Done in '30's

In the testing profession, much of the credit for the GATB's quality is given to Dr. Beatrice J. Dvorak, assistant chief of the USTES Division of Counseling and Testing and long-time head of its testing unit. She helped develop this battery, which was published in 1947 after 12 years of research. Next, she and her associates developed the manual for the GATB—a four-part document with information on its administration, scoring, development, and norms—and reported on USTES' continuing test research in technical journals. These manuals and reports, Super and Crites say, are "a model of completeness and clarity" and provide evidence needed for professional evaluation and use of the test series.

Dr. Dvorak came to USTES from the University of Minnesota, where she took her doctoral studies in psychology and did research during the Depression for the university's Employment Stabilization Research Institute. The Institute studied the occupational aptitudes of unemployed and employed workers—studies that were trailblazing in their day and are often considered the forerunner of later test development in USTES.

Testing to uncover aptitudes, as the Institute was doing, was virtually unknown in the marketplace of the thirties. Before the Depression made its heavy inroads into employment, workers were hired largely by how much experience they had, Institute researchers found. This was quite a hurdle for people who had no experience but were eager to get it. At that time, public employment offices largely served a clientele of unskilled workers, Dr. Dvorak recalls. Many of the offices had an area called the "bull pen" where jobseekers waited for work orders to come in. As these orders were received, a clerk at the front desk called them out. Jobseekers raced each other to the desk and the first ones to get there were referred to the jobs.

All this has vastly changed, thanks at least in part to the vocational testing expertise developed by USTES. Today vocational testing and counseling are important segments of the professional services public employment offices offer the jobseeker.



Testing *continued*

Meanwhile, Dr. Dvorak and her staff, along with the State employment agencies that assist in test development, continue their search for ever more objective, valid, and useful measurements. Great emphasis is being placed on improving assessment techniques for use with the disadvantaged. Dr. Dvorak does not expect that researchers can come up with results that are "culture free" because, like most psychologists in her profession, she believes that all tests reflect some kind of culture. What is sought are "culture fair" testing methods.

State Studies Sought

A Puerto Rican Spanish edition of the GATB has been used in Puerto Rico and in New York City for a decade. USTES is now starting to construct a Mexican Spanish edition of this battery. Work is also scheduled on a Mexican Spanish edition of the NATB for Mexican Americans who are unable to read either Spanish or English.

USTES is now asking State employment services that conduct test development studies to record the minority group status of persons in all experimental samples. Moreover, it is encouraging States to initiate special studies which will make it possible to check the validity of USTES tests by sex, cultural exposure, and minority group status.

Information from these studies can be used to detect cultural advantage or disadvantage in test items. The data will also be used in selecting a new general working population sample that has a known representation of minority group members. This sample may result in changes to some of the aptitude norms for specific occupations, the standards of achievement against which individual test scores are measured in both the GATB and the NATB.

USTES has also developed a new scoring system which will be used in the GATB and the NATB. It is based on what test developers call "the confidence band concept." One standard error of measurement is added to and subtracted from an individual's obtained score in battery tests. For example, a person with a score of 84 in numerical ability on the GATB may need 85 to meet minimum requirements for a certain occupation. The confidence band gives him a wider doorway through which to pass. Using this band, his score becomes 78 to 90. This should be particularly useful for persons who are somewhat weak in one ability but otherwise have good potential for occupations they are thinking of entering.

New studies are underway of the specific aptitude test batteries (SATB's), which USTES built to measure the abilities of people wishing to enter apprenticeship, a specific job in a new factory in their community, and the like. Many SATB's were put together a number of years ago, and the minority composition of the sample groups of workers on which they are based is unknown. Currently, 20 State employment agencies are doing test development studies on 48 apprenticeable occupations.

A dozen States are studying 15 other occupations for which SATB's were developed before 1955. Preliminary reports indicate that great changes are called for in testing and ability requirements for some jobs. The Illinois Bureau of Employment Security has reported, for example, that technology is altering the jobs of painters in the construction trades and cement masons—both kinds of work now call for use of spray guns and for fewer skills than were formerly needed.

Work Sampling Assessed

In 12 cities, the work sample technique is under study as a substitute for tests in evaluating the vocational abilities of some disadvantaged persons. Originally developed 40 years ago for use with people who are disabled, the technique substitutes work tasks and tools for standard tests. Its use with the disadvantaged was first explored in a project run by the Philadelphia Jewish Employment and Vocational Service in cooperation with the Pennsylvania Bureau of Employment Security.

All of this research, test refinement, and test modernization is for the purpose of creating better measurements which are instruments, and not absolutes, in assessing human capabilities for work.

Tests and diplomas are useful servants, Chief Justice Warren Burger wrote in the case of Willie S. Griggs vs. the Duke Power Company. But he said that Congress has mandated the commonsense proposition that they are not to become masters of reality. □

XUM

DISCOVERY & REDISCOVERY

Youth Corpsman Finds Mercury and Himself in a Chemistry Lab

By Chester J. Fultz

"At first I thought this job was going to be sweeping floors or cleaning glassware or something," Steve Mushock recalls. "Somehow it didn't turn out that way."

The way it turned out, Steve became involved in a discovery that touched off an international controversy over mercury pollution.

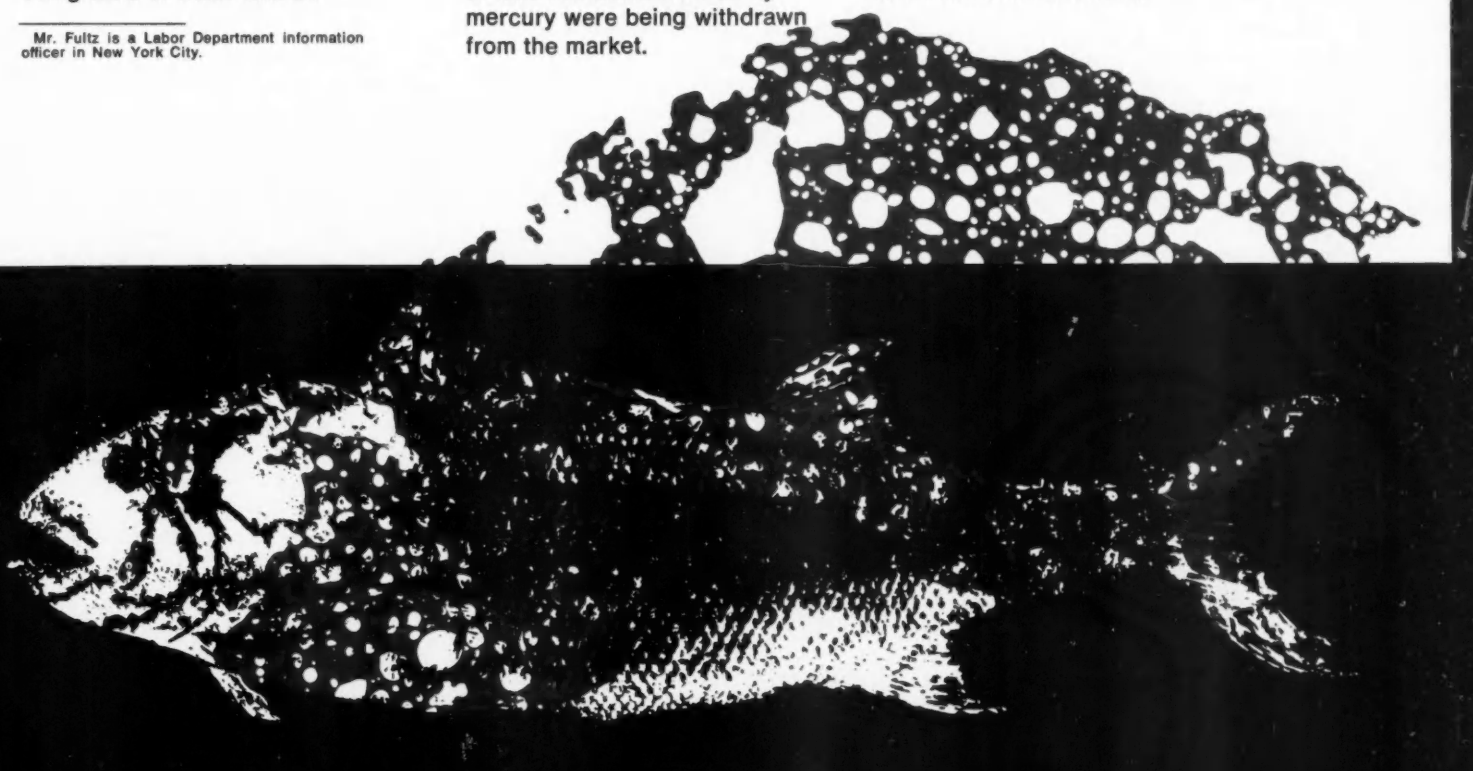
It all began about a year ago, when Dr. Bruce McDuffie, a chemistry professor at the State University of New York campus at Binghamton, asked the Broome County government to authorize a program of air and water research under his direction. The professor had become interested in environmental problems through his association with the American Chemical Society and had been doing tests of water and air contamination on his own.

He wanted $2,000 to hire two students as assistants; the county granted him $1,000, enabling him to hire one student. The slack was taken up by the assignment to him of Mushock, 17, a Neighborhood Youth Corps (NYC) out-of-school enrollee.

The professor and his youthful assistants went to work, and found mercury in the nearby Susquehanna and Chenango Rivers. Further testing turned up mercury in cans of tuna from a local grocery shelf.

Dr. McDuffie reported his findings to the Food and Drug Administration (FDA) on December 3, 1970. Twelve days later the story made front page headlines. FDA announced that as a precautionary measure a minimum of almost 1 million cans of tuna fish contaminated by mercury were being withdrawn from the market.

Steve and Dr. McDuffie check the results of a food solution mercury test made on an atomic absorption spectrophotometer, the same machine on which tuna contamination was discovered.



Mr. Fultz is a Labor Department information officer in New York City.

While the FDA said the product was still safe to eat, it announced that samplings taken as a result of Dr. McDuffie's report showed the tuna contained amounts of mercury that FDA considered excessive. Samples of frozen swordfish were also found to be contaminated.

On February 5 FDA announced that more than 12.6 million cans of tuna had been pulled off the market. It also announced that it was halfway through its swordfish sampling. Such a high percentage was tainted, the FDA said, that "the swordfish industry is being asked to withhold all uncleared shipments voluntarily. When voluntary compliance is not effective, FDA is using its seizure authority."

Dr. McDuffie credits young Mushock with playing an important role in the discovery that precipitated this chain of events. "Steve came to the lab during the summer, and mercury tests were made in the fall," said Dr. McDuffie. "Steve helped me to get the mercury program off the ground.

"We took some water samples and tested them for the presence of mercury. We tested some small fresh water fish as well. Then my wife and a student of mine suggested that since the only fish they ever eat are tuna fish I should run some mercury tests on tuna. Sure enough, we found abnormally high concentrations of mercury in the sample cans.

"Steve worked closely with me on these initial tests, and now he's gotten to the point where he can weigh out samples, dissolve them, turn on and adjust the machines, and run the samples through for the tests. He's really pretty reliable and I've come to depend on him quite a bit.

"From tuna fish mercury samples we went on to swordfish because it's a large, ocean predator that's pretty high up on the food chain. And obviously, Steve has been involved in that as well."

Steve at work in the laboratory.

Steve's work for Dr. McDuffie and his other NYC activities earn him $52 a week. The NYC, which is funded by the U.S. Department of Labor, provides work experience, training, and education for disadvantaged youth who are, or are in danger of becoming, school dropouts. As an out-of-school NYC participant, Mushock works for Dr. McDuffie 3 days a week and spends the other 2 days in remedial education leading to a high school equivalency certificate. He left school in the 10th grade because he had to work; it was either that or go hungry. His home life had become impossible and he needed a place of his own.

For a short period he tried drugs. "But after a while you've got to eat, and you become aware that you're losing your mind with drugs," he said. "I was born to live, not to die. Like a couple of my friends are total vegetables from drugs. It's really a bad scene."

He came to the NYC after an aimless search for jobs in Binghamton. When the standard battery of tests given new NYC applicants showed a marked aptitude for the sciences, Mushock was assigned to Dr. McDuffie.

Now he has his own apartment in Binghamton, expects to have his high school diploma soon, and plans to go to college.

"I'm not really sure about my life's career to tell you the truth," Steve said, while he prepared a swordfish sample for examination for mercury under an atomic

absorption spectrophotometer. "I like chemistry and working in the lab because I'm interested in the environment and pollution. Do you know that half of the mercury we're finding in fish is 'natural' mercury, and the remainder is put there by man? Paper and film processing plants particularly add a lot of mercury to the environment and that's what we've got to cut back on. But like I said, I'm just not sure about what I'm going to do.

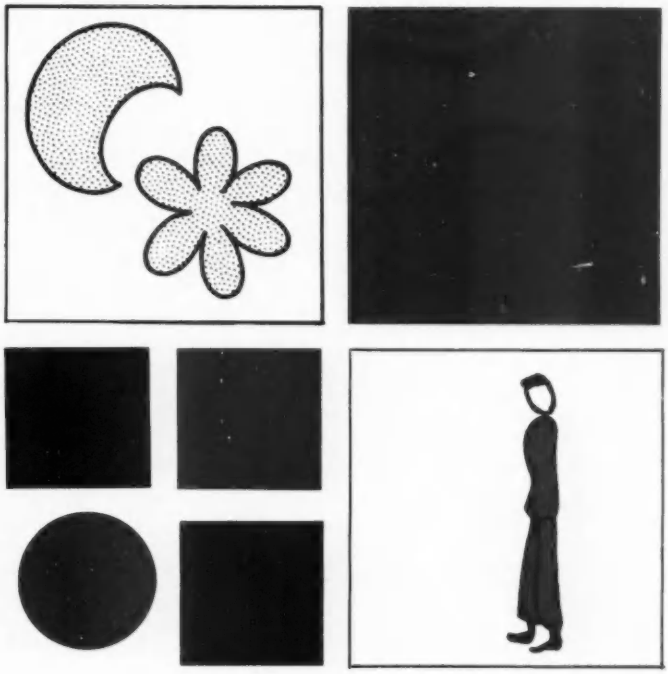
"I guess maybe I'll take a liberal arts course, possibly leading to something in the agricultural field. I'd like to be a farmer, I think, and grow food organically, without all the chemicals and things we use on everything. All of these unnecessary chemical additives and preservatives being taken into the body are tearing it down."

Dr. McDuffie is giving him every encouragement. "He's a bright boy," he said. "He's got a good mind. He's applied for a scholarship through the Model Cities Program up here, and I hope he gets it. I'm sure though that he'll get to college one way or the other, even if he has to work himself through. Now that he's on his own and has his own apartment, I feel he'll make it." □

XUM

COLOR CUBES, CREATURE CARDS, AND PEOPLE PIECES

School Children and County Profit From Science Kits Made by Youth Corpsmen



In Fairfax County, Va., 12 teenagers—members of the Neighborhood Youth Corps (NYC)—are helping about 30,000 elementary school children learn for themselves how scientists reason and work. In the process they have helped the county save more than $50,000.

The NYC high school students are making component parts and assembling science kits at a county instructional materials processing center. The classroom-sized kits are then dispatched to schoolrooms throughout the county where they enable young children to carry on scientific explorations.

Dr. Douglas M. Lapp, director of the county's Elementary Science Study (ESS) project, says the program is geared less toward teaching scientific facts than toward developing in young children the ability to think logically and the self-confidence to question and search for solutions to science problems.

The new elementary science activities follow a curriculum that was shaped by the Education Development Center in Massachusetts with grants from the National Science Foundation. About 1½ million students around the United States are now working with ESS materials which lead them to investigate small things through a microscope, the behavior of meal worms, life in pond water, buoyancy, the nature of batteries and bulbs, strategies for estimating numbers, and ways to classify objects.

To reduce costs in adopting the ESS program the county decided to buy necessary raw materials for the activities, then use local talent to put them together. This decision called for purchase of vast quantities of plaster of Paris, flour, sugar, salt, vinegar, votive candles, dried peas, lima beans, Indian corn, mung beans, baking soda, starch, batteries, screws, nails, mirrors, wire, spools of many sizes, plastic buckets, medicine cups, food coloring, chemicals, and assorted other odd and ordinary objects.

Last summer a staff of 30 youngsters and a few adults—all from low-income families in the instructional materials processing

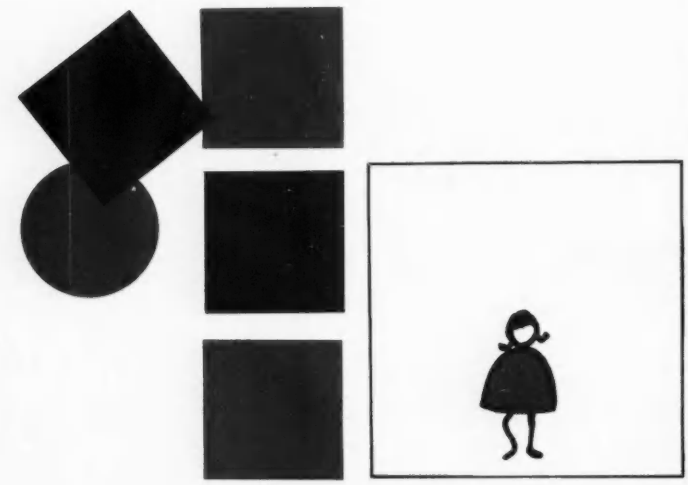
center neighborhood—completed enough kits to supply half of the county's elementary classrooms. The youngsters were enrolled in the Neighborhood Youth Corps, a U.S. Department of Labor work experience and training program for youth 14 to 21 years old. The present staff is made up of 12 youngsters, a number of them continuing from the summer, who are paid $1.60 an hour for 2 hours of daily after-school work. They are paid by the NYC with Federal funds. Also working are six adults who put in a full day and are paid from local funds.

S. John Davis, division superintendent of schools, says that the decision to ask for NYC youth to work at the center was not based on concern for saving money.

"We felt that this would be a valuable experience for them because their employment would give them a chance to get really involved in a meaningful work situation which is of definite value to the community. They could help their younger brothers and sisters who are using the new materials, and they could walk to work because their homes are next to the center.

"It has proved to be one of the most positive moves we could have made."

Seven thousand 100-power microscopes have been built out of thread spools, pieces of steel strap, chunks of dowel rod, mirrors, screws, wood squares, and pen light bulb lenses. Several thousand balances have been made from plastic ice cream buckets and 20,000 feet of chain. Hundreds of mystery boxes, used to study electric circuits, have been constructed. Chemicals have



A) *Velda Gardner snips off the right length of bead chain to hold a balance pan.*

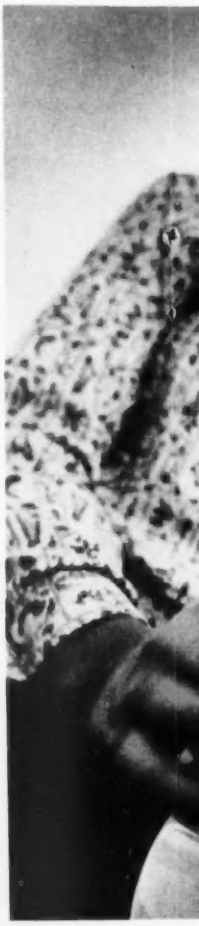
B) *A plastic ice cream bucket begins its conversion to a balance pan as Sheila Payne puts a reinforcing eyelet in it.*

C) *Balance beams for the science kits come off this production line.*

D) *An elementary school student and his teacher examine the plant the class grew from the seed packet that is part of the science kit produced by NYC youngsters.*

E) *Using a batteries and bulbs kit made by NYC participants, elementary school youngsters see if they can make a steel wool filament "light up" like a flashlight bulb.*

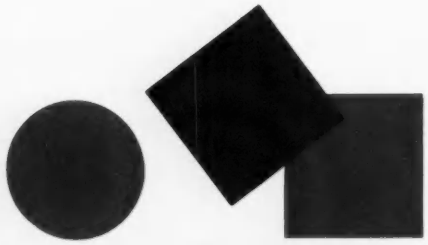
F) *Attribute blocks and the labels that go with them are sorted by Gertrude Bigelow and Michael Fuller as they assemble a study unit that will help elementary school children develop their thinking skills.*

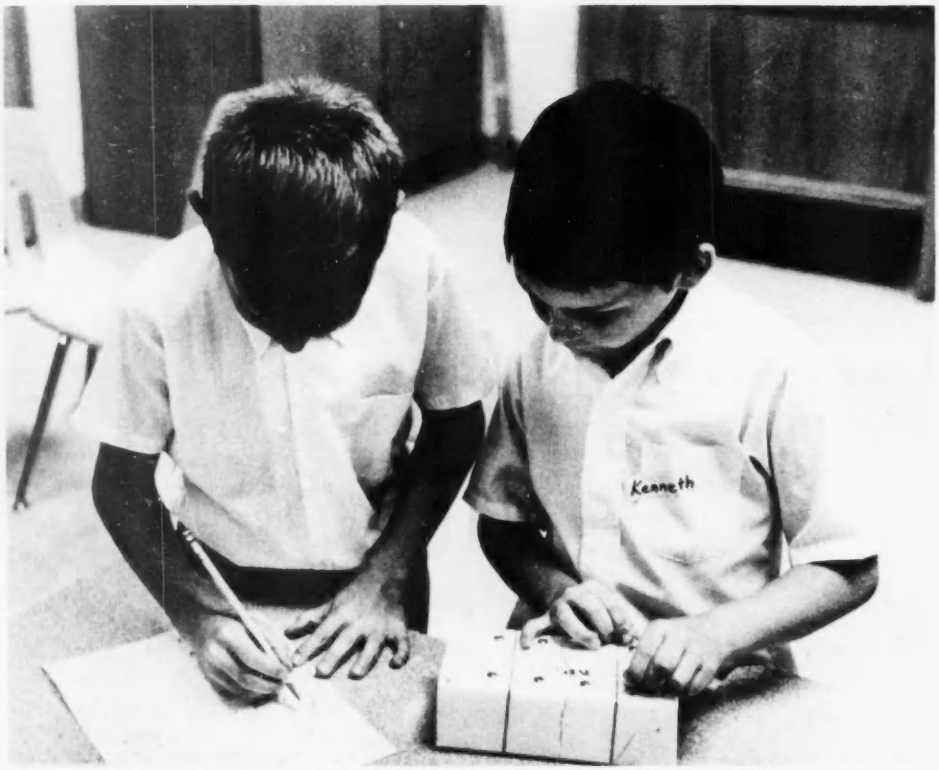


been poured from huge vats into small vials for individual student use. Votive candles have been packaged for use as simple heating units for chemistry activities.

Materials for the center's microscope cost only 26 cents, although a similar instrument from a commercial supplier costs $4.31. A batteries and bulbs kit to stock a 32-student classroom costs $87, compared to a less complete commercial version that markets for $122. The center has totted up comparative costs for the first 6 months of its operation and found that its homemade science kits saved the county $57,622. Additional savings will be realized as new kits are turned out to supply the rest of the county's elementary classes. It is more difficult to assess the savings in refurbishing kits, Dr. Lapp says, since it is a service commercial firms do not supply.

The NYC youth are now restocking kits so that they can be used again. More than 2,000 large, double-walled cartons are moving from classrooms into the center,





Elementary school students use a bulb and batteries to find out where the hidden wires are connected in a "mystery" circuit box made by NYC participants.

Sylvester White uses a power screwdriver to fasten the glass side clips to a 100-power microscope.

then back out to other classrooms. This permits use of each science kit by two classes each school year.

New seed packets, bottles of methylene blue stain, brine shrimp eggs, and other things of science must replace those already consumed. Copper, Nichrome, and enamel-coated wire must be untangled and rewound on spools. Extraneous evidence of use—like stray pencils, crayons, bits of candy, and notes from home—must be removed. When this job is done, building of new kits will resume so that all elementary schools will be able to participate in the program by next fall.

Some kit materials are purchased in bulk lots from commercial manufacturers, and then sorted and repackaged by the NYC youngsters. There are a number of such items that the teenagers particularly enjoy working with: Attribute blocks, color cubes, people pieces, and creature cards.

Attribute blocks are sets of 32 wooden blocks of four shapes, four colors, and two sizes.

Color cubes are wooden blocks in primary colors.

People pieces are flat squares of plastic with drawings of people who have different characteristics in their color of clothing, sex, and size.

Creature cards have drawings of shapes and figures. Some are shaded; some have curved lines, or tails, or spots, or other special marks. The cards come in families named Gligs, Wibbles, Shlooms, Bleeps, Quarks, Trugs, and Mellinarks.

The color cubes, people pieces, and creature cards are ingredients for a study unit which helps children develop thinking skills. Problems set out in the unit require children to sort through many things that are like and unlike each other. Out of a multitude of factors they learn to find the ones they need in order to work out specific problems. Do Gligs have squiggly tails, or don't they? By solving such problems, students learn to analyze and classify.

And that's exactly what the NYC teenagers must do to these objects as they sort them out in correct combinations and classroom-sized lots. They are confronted by piles of Gligs and Trugs—and they never get them mixed with Mellinarks. □

XUM

XUM

News & Notes

About one-third of the 1 million people aided by Manpower Administration programs last year were youths under 22. Some $615,088,000 of the Manpower Administration's $1.28 billion for training support went to the youngsters. "Though this is a considerable portion of the budget, I think it is justified to spend this share on youth when you consider their rate of unemployment is four times higher than for workers up to age 60," said Malcolm R. Lovell, Jr., Assistant Secretary of Labor for Manpower.

* * *

Every American is entitled to equal treatment in the job market. A new pamphlet by the Manpower Administration, "Know Your Employment Rights," spells out what this means. It cites the legal basis of these rights—the Equal Pay Act of 1963, the Civil Rights Act of 1964, and the Age Discrimination in Employment Act. It also outlines what steps workers can take when they believe their employment rights have been violated. Single copies of the pamphlet can be obtained free from the Manpower Administration, Inquiries Section, U.S. Department of Labor, Washington, D.C. 20210. Additional copies are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 at 20 cents each.

* * *

Can the computer end the often clumsy and expensive business of recruiting on campus? Probably not, but it may be able to help eliminate the preliminary steps. A new pilot system called Grad 2 is matching job openings at 117 top U.S. companies with undergraduate applicants from 17 universities. The project was started last fall by the College Placement Council in Bethlehem, Pa. Some company recruiters report the system shaves costs, reduces administrative tasks, and nails down prospects in areas they might not normally visit. Hiring is done only after a meeting between the recruiter and recruit.

* * *

Frank G. Zarb, 36, has been named Assistant Secretary of Labor for Administration, succeeding Leo R. Werts, who retired. Zarb was executive vice president of the New York investment firm of CBWL-Hayden, Stone Inc.

Some 400 to 600 unemployed aerospace scientists and technicians will be at work soon on urban problems. A $1.2 million pilot program to switch them from defense to domestic tasks is being funded by the Manpower Administration and the Department of Housing and Urban Development (HUD). If successful, the program will be expanded to employ up to 2,000 people. Heading the effort are Malcolm R. Lovell, Jr., Assistant Secretary of Labor for Manpower, and Floyd H. Hyde, HUD Assistant Secretary for Community Development. State employment services and professional organizations will do the recruiting. Lovell and Hyde are asking help in screening candidates from the National League of Cities/U.S. Conference of Mayors, the International City Managers Association, and the Conference of Governors.

* * *

"America lost a towering figure in the battle for human justice with the tragic passing of Whitney Young," Labor Secretary J. D. Hodgson said in a statement on the death of the executive director of the National Urban League. "This great American dedicated his life to brightening the lives of the disadvantaged minorities in our rural backwaters and in our teeming big-city ghettos," Hodgson said. "Under his able stewardship, the National Urban League has played an increasingly vital role in our efforts to widen training and job opportunities for minority group citizens. All of us are poorer because of the loss of Whitney Young. But every one of us is a good deal richer for all this courageous fighter gave us in a life of untiring service."

* * *

Federal employment is expected to total about 20,000 less in June 1973, than the June 30, 1969 figure of 3,040,129, according to "Federal Workforce Outlook," published by the U.S. Civil Service Commission.

* * *

Some 263,488 workers are due $55.2 million in back wages as the result of violations of Federal labor standard laws from July 1970 through January 1971. The Department of Labor's Wage and Hour Division said the illegally withheld wages represented violation of minimum wage, overtime, equal pay, age discrimination, and fringe benefit provisions of various Federal statutes.

Office Landscaping

New Look for the Workplace

By Ruth Shimonkevitz

Home may be where the heart is, but the office is where the white-collar worker spends most of his waking hours Monday through Friday. That being the case, "white noise" may some day rival crabgrass as a prime topic of car pool conversation. White noise, hanging files, and free form clusters are among the terms and techniques of office landscape, which is dedicated to making the office a more attractive and productive place to work.

Office landscape originated in West Germany and has found its primary and most extensive use in Europe. It has recently been adopted by private companies and government agencies in the United States and is attracting increasing attention as a more effective and less costly way to use available office space while offering workers a pleasant work setting. A major advantage, according to its proponents, is that people and equipment can be shifted around much more easily and inexpensively in a landscaped office than in a conventional one.

Office landscapers reject the concept of an office as "paperwork factory." They view it as a specific mix of people, paper, and machines involving five interrelated factors: Organizational, operational, technological, sociopsychological, and economic.

Based on this cybernetical definition, complete office landscape planning is done most effectively by a team of specialists in the fields of architecture, engineering, management analysis, the behavioral sciences, and interior design. Through ques-

Miss Shimonkevitz is a member of the Manpower Administration information staff.

tionnaires and analyses, the usual practices and priorities of the office are identified.

Office layouts are based on actual working relationships and work-flow patterns rather than organizational charts that may exist only on paper. Then, when desks are put in place, the people sitting at them should be close to those with whom they deal most often in their jobs. Sections and divisions also are located nearest to those with which they work most closely. In this way, office landscapers reinforce and facilitate an office's real activity and hope to counteract artificial relationships.

Generally, office landscape is most appropriate for noncreative, service-producing groups which have a high degree of staff interaction. Employees and their work stations are placed in a large, open area because it will hold more people comfortably than the same area boxed off into smaller offices. There is nothing unique about putting large numbers of employees in a big office, but office landscapers contend that when done in the traditional manner the usual result is a "bullpen" or row upon row of desks.

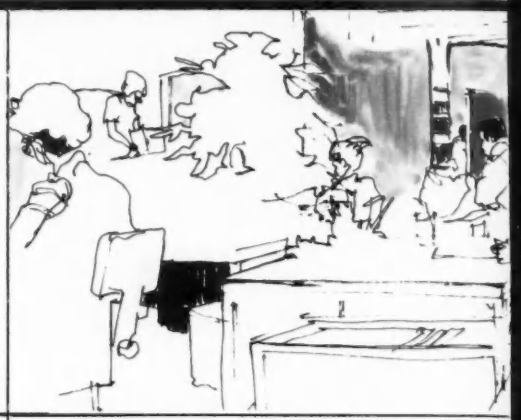
Office landscape also takes account of the "sociopsychological" (or human factors) side of office life. In an effort to meet individual needs, employees are asked what they think are the most important aspects of their jobs, where improvements are needed, and how they spend their working time.

Because a pleasant work environment can increase productivity, physical surroundings are extremely important in office landscape. Heavy reliance is placed on acoustical engineering and interior de-

Office Landscaping *continued*

sign. Warm, bright colors are used in open areas. Roll-away, hanging files are recommended to avoid cluttered desks, tables, and floors that make the office appear crowded. Employees are seated at different angles—in "free form clusters"—so they aren't all facing backs of heads, aisles or walls, or each other.

To obtain maximum flexibility, office landscapers prefer modern, easily movable furniture. Telephone and electrical outlets are located at fixed intervals in the floor so desks can be rearranged



without the necessity of extensive rewiring.

Although the emphasis is on open areas, audio and visual privacy still are essential. They are obtained by using acoustical screens and large, live plants to break up work units and office sections.

In office landscape, day-to-day working relationships between "chiefs" and "indians" is considered more important than symbols of superior rank, such as a private corner office with a window. High-level personnel are usually distinguished only by being surrounded by higher screens for the most privacy.

Among the organizations in the United States using office landscape are DuPont de Nemours in Wilmington, Del.; Eastman Kodak in Rochester, N.Y.; Corning Glass in Corning, N.Y.; and the New York Port Authority in New York City.

Kodak's experience with office landscape since 1966 has been so successful that eventually 80 percent of the floor space in its eight-building complex will be of this interior design. A 1968 survey of Kodak employees in landscaped offices showed that 88 percent preferred the new design—with the general work atmosphere listed as the most important improvement. Three out of four employees thought that their new locations relative to their supervisors were more convenient, and 9 out of 10 supervisors felt the new layout made them more effective.

Kodak has made some modifications of its original landscape scheme, but these have mainly involved the filing system. Files retirement is an important element in a successful landscape plan, and file storage in the office is generally limited to small carts that slide under desks as part of the furniture. Especially in its credit department, Kodak has found that

larger filing cabinets are necessary and more convenient for ongoing office use.

Kodak has profited from the economics of landscaping. The company has increased its space utilization by 5 percent, and it reports that the cost for simple shifts of furniture is 30 to 40 cents a square foot for landscaped space compared to $2.30 to $3.19 for regular offices. Since office equipment is selected for flexibility and electrical outlets are spaced to make alterations simple, moves usually involve only furniture shifts. In addition, Kodak has found that its waiting time for making moves has been significantly reduced. It used to take 6 months from the date of request to complete a move. Moves in landscaped areas require only a week's delay, according to Kodak.

Estimates from companies other than Kodak for major relocations—including electrical, telephone, and construction work—run as high as $35 per square foot for the usual office setup. These extra costs are practically eliminated in landscape.

Relocation—in this case a forthcoming move to a new headquarters building—is what prompted the U.S. Department of Labor's interest in office landscape. In mid-1967 the Department of Labor drew up the initial floor plans for the approximately 5,500 employees who will move into its new building in the mid-seventies. In the conventional design the majority of employees would be bunched in the inner areas without windows. Although a generally accepted practice, the Labor Department sought a different approach and turned to office landscaping as a possible alternative.

With the cooperation of the General Services Administration, the agency that manages Federal Government property, a feasibility study was requested to analyze the landscaping concept and determine whether it could be used in the new building. In the fall of 1968, the study was completed—and indicated that substantial savings in construction and maintenance costs and space use could be made under landscaping.

As a result of the study, the Labor Department decided to test office landscape in one of its divisions. The planning team for the pilot project included representatives of the Labor Department, the General Services Administration, the architectural firm of Brooks, Barr, Graeber, and White, and the Quickborner Team, the management consulting firm that originated office landscape. The Bureau of Labor Statistics' Office of Data Collection and Survey Operations was selected for the pilot project because it met certain basic requirements:

- It is a service-producing group.
- Its range of jobs and responsibilities, including statistics, economics, computer technology, surveying and data collection, and clerical and secretarial work, are found in a typical government unit.

- The office's work requires frequent staff interaction.
- It has a relatively large number of employees — 222 — distributed over the normal Government grade-level structure from GS-3 to GS-16.
- Its office area met minimum size and structural requirements.

The test group moved out of its 25,000 square feet of space in the General Accounting Office building in Washington while the office was converted to the landscape pattern. Old Government-issue furniture and room dividers were moved out and a host of alterations made. Wall-to-wall carpeting was installed, along with a suspended ceiling of sound-absorbing material. Lighting adequate for every work station in the room and an improved ventilation system were run through the new ceiling. Telephone and electrical outlets were placed in the floor at fixed 8-foot intervals, and the walls were covered with sound-absorbing panels.

Live plants to provide oxygen, visual barriers, and decoration were moved in with modern furniture that included hanging files and high, open bookcases. Colored, arched screens also covered with

Office Landscaping *continued*

sound-absorbing material were installed to insure audio and visual privacy. "White noise" (which sounds like a soft rush of air) was piped in to provide a sound level against which office clatter is reduced and softened. And two lounge areas complete with self-service vending machines were provided for work breaks. The renovation took nearly 17 months, and the Data Collection staff moved back in last December.

The reaction of the Data Collection staff to the experimental office generally has been quite favorable. Among the strong points cited by employees are the office's colorfulness and quietness, and the feeling of being part of an organization, but not part of a crowd. "It's nice to know the people you're working with," says Mrs. Agnes Dillard, a statistical assistant. Moreover, Mrs. Dillard is located about 15 feet from the service area housing the keypunch and flexowriter and can speak for the generally low noise level maintained in the office.

John W. Gracza, director of the Data Collection office, also likes the experimental design. He makes a special point of the neatness which results mostly from limits on what may be stored on desk tops and restrictions on the number of files kept in the office. He likes having his staff together and feels that there is enough space for all to work comfortably. Gracza's only criticism is that there isn't enough audio privacy for conferences, but there is for the usual two-party conversations.

Other bugs are present, too, and the planning team and the Data Collection staff hope to work them out soon. Three changes—a few more screens, minor seating modifications, and some way to keep material from slipping through the open, hanging files—would solve most of the complaints, except for one group of professionals. They are lined up one behind the other along one wall, mainly because added staff threw the original placement off.

While these professionals approve of the general office layout, some feel that since they frequently hold interviews at their desks their particular operation may not be suitable for office landscape. These interviews interrupt the work or interviewing being done by others. Also, the forms this group constantly needs are stored in another room making frequent walks routine in a day's work. The problems of conference privacy and this group's placement are priority items for the planning team, according to Gracza.

Much of the criticism of landscape by Data Collection Office employees involves old habits that are hard to break, such as women who like to keep their purses at their desks (rather than in lockers in a lounge area), the lack of in- and out-boxes on desks, and the lack of space in drawers for tissue boxes. These complaints reinforce the belief of office landscapers that employees must be reeducated to accept the principles of the new concept.

Along with trying to solve these problems, the planning team will have a chance to test the lower alterations costs promised by office landscape if a Data Collection Office organizational change occurs as planned. Also ahead are evaluations of employee attitudes toward the experimental layout after a 6-month occupancy period has passed.

Because it is an experimental project, the costs of the test office have been relatively high. Among the contributing factors noted by Labor Department and General Services Administration officials associated with the project are consultants' fees, the cost of office space needed to house the Data Collection staff while changes were made, and the high cost of the alterations needed to convert the old office space to landscape. Obtaining new furniture to meet landscape specifications was also expensive, although it is approximately $8 an item cheaper than the replacement price of the furniture used in the old office.

Planners of the pilot project say that a 10 percent saving in construction costs can be made if landscaping is used where practical in the new Labor Department building. In addition, they point out that space savings would be realized since office landscape will accommodate 10 percent more people. Moreover, up to one-third of the Department's employees are affected each year by relocations, realignments, or space changes. If previous experience with landscaping holds true for the test project, the time and money spent on such changes would be significantly reduced. □

BLACK EMPLOYMENT IN HOUSTON

By LAURA PERLMAN

Even in Texas—where, legend has it, everything is bigger—the rise of Houston has been spectacular. In a few decades it has grown from a small city to a flourishing metropolis of over 1.2 million people—the biggest in the South and sixth largest in the Nation.

Houston's mushrooming industrial complex includes large facilities for the production of chemicals, petroleum, liquid hydrocarbon, nonelectrical machinery, and steel. The city is the corporate headquarters for many of the Nation's largest firms. It has a large medical complex and a fast-growing wholesale and retail trade. In annual tonnage its port is the country's third largest. Construction is booming.

But for the 1 out of 4 Houston citizens who is black, the city is virtually the same town it was decades ago. Houston's prosperity has bypassed most of its blacks. This is the central finding of a new study[1] made for the U.S. Department of Labor and the U.S. Equal Employment Opportunity Commission (EEOC) by Vernon M. Briggs, Jr., associate professor of economics at The University of Texas at Austin. Briggs' study provides a wealth of information and fresh insights on the economic status and employment patterns of Houston blacks and efforts to improve their lot.

Most Houston blacks, he reports, are poor, discrimination is widespread, and a large share still work at traditional "black jobs" as maids, cooks, yardmen, and laborers.

Conventional wisdom holds that a tight labor market almost inevitably brings forth a climate of change in racial employment patterns. "A review of the Houston experience should put to rest such simplistic notions," Briggs says. Despite a burgeoning economy, "the occupational and industrial employment patterns of

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Mrs. Perlman is a member of the Manpower Administration information staff.

[1] The Houston study is the first volume in a study of *Negro Employment in the South* being made for the U.S. Department of Labor's Manpower Administration and the U.S. Equal Employment Opportunity Commission. *The Houston Labor Market*, a monograph on the Briggs study, is now available from the Manpower Administration.

black Houstonians have been shown to be worse than those of blacks in the Nation as a whole and virtually identical to those of blacks throughout the South," he reports.

Briggs' conclusion is based, in part, on his analysis of data from EEOC on penetration by minorities into industries, their occupational position in these industries, and their participation in a number of specific jobs in the Nation's 46 largest labor markets.

Briggs found black unemployment rates in Houston low compared to many other cities. "Most black men who seek jobs find them," he says. Still, "the familiar relationship of the black rate being twice the white rate holds true," he notes. The 1969 overall black unemployment rate of 6.6 percent for the Houston central city was over three times the white rate. The heart of the problem, Briggs contends, is that the jobs blacks hold "are typically in personal services, in small business enterprises, and in declining occupational categories. Where black men have penetrated growth industries, they are overwhelmingly concentrated in the lowest paying occupations."

The employment situation of black women is even worse, Briggs reports. Their employment status shows a pervasive pattern of exclusion from all but the most menial occupations.

While the picture has changed somewhat in recent years, Briggs says, the changes have come slowly and brought only surface improvements. Houston participates in most Federal manpower programs which seek to bring change through training, employment, and remedial education. After studying these efforts, Briggs concludes:

"Relative to the universe of need, the impact of these programs upon prevailing black employment patterns has been virtually unfelt. With a swelling ghetto population, Houston is losing ground in its efforts to respond to the social needs of its citizens. Manpower programs are not addressing themselves to the needs of black men and are inadequately serving black women."

The picture Briggs draws points up the urgent need for change and at the same time the difficulties that hinder efforts to bring it about. A majority of Houston blacks are poor by Federal income standards. According to the Harris County Community Action Agency, of the city's poverty population in 1965, 60 percent—161,000 people—were black.

Professor Briggs' study on black employment in Houston is a useful new tool in our continuing effort to identify and correct instances of job discrimination and to make our manpower programs responsive to the needs of people. The situation described by Professor Briggs is deplorable, one that cannot be permitted to continue without strong effort at correction. While manpower training programs are not the sole answer, the Manpower Administration fully intends to exert leadership in seeking solutions to the employment problems of minority persons in Houston and around the country.

Malcolm R. Lovell
Assistant Secretary of Labor for Manpower

Houston does not have a single black ghetto in the customary sense of the word. Rather, it has several enclaves: (1) A central area called "the original CEP area" because it is the section of the city where the U.S. Department of Labor's Concentrated Employment Program began operations; (2) Sunnyside in south Houston; and (3) Acre Homes in the northeast.

The CEP area, containing the greatest concentration of blacks, is the inner core of the city. Buildings are generally old and rundown, encroaching freeways are displacing housing, and the population is stagnant. In 1965, 60 percent of the residents were officially classified as poor, and of these, over 70 percent, or 75,000 people, were black, Briggs reports.

Family Incomes Low

The greatest increase in the poverty population is occurring in Sunnyside, an area where 95 percent of the people were poor in 1965 and virtually all of the poor were blacks.

Briggs found that despite higher labor force participation rates than the national figures, black families in the CEP area earned barely enough to live on. Their median annual incomes for the period ranged from a low of $2,200 for unrelated individuals to a modest $5,400 for families of four or more. More than a third of all families made less than $3,500 a year.

A significant obstacle to black advancement is the education most blacks receive. Segregation of elementary and secondary schools remains a troublesome issue, Briggs reports, with protests that racial integration has resulted mainly from Chicano students being redistricted into predominately black schools.

Most black youth who go on to higher education in the area attend Texas Southern University, a predominately black college with a wide variety of courses and programs ranging from graduate school to compensatory education. The lack of a community college is a real handicap to black youth, Briggs says. Houston has only one junior college, a private school which in 1968 had one full-time black student.

As in many other cities, inadequate public transportation bars many blacks from good job opportunities, the Briggs study shows. The major firms are outside black ghettos. In fact, most of the largest employing units—especially for blue-collar workers—are outside the city limits. For example, the industrial complex of the Port of Houston, which employs 1 out of 9 workers in the area, is from 8 to 20 miles from the CEP area and even farther from other black enclaves. The gigantic new U.S. Steel facility is about 30 miles east of the center of Houston, and the National Aeronautics and Space Administration headquarters is about 25 miles southeast.

Whites are able to live near these large employers, Briggs points out, while most blacks must commute miles to work—if they can get there at all. The effect is to bar them from such jobs. According to the Houston Cooperative Area Manpower Planning System (CAMPS) Committee, "public transportation to many industrial sites is nonexistent. Travel on existing bus routes to the widely scattered industrial activities is not feasible for many residents of target areas due to travel time required."

A variety of other factors contribute to the disadvantaged position of most Houston blacks. Among obstacles Briggs lists are "a weak union movement that is generally insensitive to civil rights goals; a po-

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litical election process that makes achieving racially representative public bodies a near impossibility; the presence of a second minority group; and the absence of effective community organizations to marshall pressure for change."

Superimposed upon the general conditions that shackle Houston blacks is a pattern of discrimination—clearly revealed by Briggs' study of the jobs black workers hold. His analysis is based largely upon data collected by the Equal Employment Opportunity Commission for 1966 through 1969. Briggs argues that the fact that 39 percent of all white workers in the Houston area are in jobs covered by EEOC regulations compared to only 29 percent of the blacks is itself a revealing commentary on job patterns. He notes that "EEOC reports cover private firms which employ more than 100 workers for more than 20 weeks in the year—enterprises where wages are typically higher, working conditions better, and union activity more prevalent.

"Thus blacks were concentrated in firms not covered by the EEOC reporting requirement—numerous service establishments, nonprofit enterprises, and government agencies—or were independent workers," he says. "Other than government, these enterprises usually offer less favorable working conditions than the covered firms." For this reason, Briggs maintains that EEOC's figures—bad as they are—present a more optimistic picture than the reality of blacks' position in the Houston labor market.

Even so, EEOC statistics clearly point up the difficulty black workers have in breaking into white-collar jobs. While their share more than doubled between 1966 and 1969, they still made up only 4.7 percent of white-collar workers in large firms. Moreover, Briggs notes, their big gains were in lower level jobs as technicians, sales workers, and clerks. And these increases, he says, were due largely to black women moving "from inordinately low occupational levels" into clerical and sales jobs and being hired as technicians in the medical industry. Managerial and professional positions are still a virtually all-white preserve. Blacks made only slight inroads, and in 1969 held less than 2 percent of the jobs at these top levels.

This pattern exists in virtually all of the area's 10 top industries, Briggs' study shows. In 8 of the 10 largest, the percent of blacks in jobs of any sort was well below their share of the population. And in nine, opportunities for black women were almost nonexistent.

A notable exception was the medical services industry. Houston is renowned for its medical complex, which has superior facilities for education, research, and patient care. The employment needs of the industry have grown rapidly, and a sizable share of these opportunities has gone to black women, Briggs reports. In 1969 nearly one-third of Houston's medical workers were blacks and almost four-fifths were women. In the other nine industries (substituting gas, electric, and sanitary services for construction because it hires few women of any race), black women held only 1.5 percent of all jobs in 1969, over half of them in the retail trade.

In the blue-collar ranks, blacks increased their already sizable share of jobs between 1966 and 1969. Yet they held 310 fewer blue-collar jobs in 1969 than 3 years earlier, reflecting a significant decline in blue-collar opportunities. Since

nearly 6 out of 10 black workers in the covered industries were in blue-collar jobs in 1969, attrition in these occupations cut seriously into opportunities available to blacks.

A telling indication of blacks' low economic position is the two occupations in which they held close to half of all jobs—laborers and service workers. In 1966 nearly half of all black women in the labor force were service workers; 3 years later, the proportion was still over 40 percent. Likewise, in 1966 nearly 90 percent of all employed black men worked in what have become traditional fields for them—operatives, laborers, and service workers. In 1969 that figure was only 10 percent lower.

Turning to the public sector, Briggs finds that black employment patterns are similar to those in private industry. The Federal Government, a major Houston employer, had a 21.6 percent black work force in 1967, but nearly two-thirds were in the Post Office Department. "Whatever wage system they worked under," he reports, "blacks dominated the lowest paying categories." Typically, they had the poorest opportunities for advancement. Briggs says that a forthcoming study made by a University of Texas doctoral candidate comparing the occupational positions of blacks in Federal employment in 41 Standard Metropolitan Statistical Areas will show that Houston ranked lowest (41st) in black penetration of better paying jobs.

For local government, Briggs tells a similar story, drawing on a 1967 study by the U.S. Commission on Civil Rights. Although blacks held 19 percent of the jobs, few were in white-collar positions. About two-thirds of the blacks employed by the city of Houston—the unit of local government which has the largest number of black workers—were laborers.

Manpower programs represent the only significant effort to alter prevailing racial employment patterns, Briggs says. The main effort to help significant numbers of disadvantaged blacks is the Concentrated Employment Program (CEP). CEP is a coordinated effort to reach disadvantaged people in poverty neighborhoods and arrange for the combination of orientation, education, and job training they need to move into decent jobs.

In Houston, the program has a predominately minority group staff and operates close to concentrations of black population. Hence, one of its key attributes, CEP officials feel, is its ability to relate to blacks who need training and jobs and who make up over 80 percent of the participants, Briggs reports. An unusually high proportion—about 80 percent in the first 16 months of operation—have been women. He cites four reasons for this imbalance:

- In Houston's tight labor market CEP's training for entry-level jobs that pay the minimum wage meets the needs of women but not men. One Texas Employment Commission official describes the situation like this: "We have a standing backlog of orders for jobs (paying $1.60 an hour) for any man who walks in here looking for a job. For women, however, they'd be tickled to death to find a $1.60 per hour job. They are trying to escape the $36 a week jobs that require 48 hours of work as a bus girl or maid that are usually the only jobs available to them."

Evening Classes Urged

"Accordingly," Briggs comments, "it is no surprise that women enroll in the training programs where they receive a training allowance that approximates or exceeds what they can receive in the open market." And he quotes a CEP official as suggesting "a close look at the male jobs—many could be done by the females."

- Restrictive guidelines for eligibility limit the participation of men. The requirement that participants be "economically disadvantaged," as defined by nationally set income criteria, means that a man with a family of four making more than $3,800 per year is ineligible, even though this income level is acknowledged to be inadequate to support a family. The net effect, Briggs says, is that black men are denied the opportunity for training that would upgrade their skills and permit them to move up to jobs paying a decent wage.
- Holding training classes during the day cuts down on male participation. Most black men are underemployed rather than jobless and hesitate to quit working to take training. Briggs quotes a CEP official as proposing evening training for working men but reports that, as of mid-1969, only one night class—in basic education—had been introduced.
- The type of job training CEP provides does not attract men. Most training, Briggs says, is for entry-level jobs which pay little more than an untrained man can earn. In this regard an EEOC representative specifically mentioned training to become guards, groundskeepers, and custodians.

Despite these defects, CEP's major problem lies not in the program itself but in the attitudes of the business community, Briggs suggests. Job development with private industry has been very difficult. The frustrations of the program effort are, he says, reflected in these comments by a CEP official:

"Businessmen just don't know how to deal with minority people. Industry is still asking for the 'super Negro.' There is no thrust for meeting the hiring needs of the disadvantaged."

Far greater potential for successful job development lies in Houston's Job Opportunities in the Business Sector (JOBS) Program, Briggs believes. As one CEP official commented, "The really good thing about the undertaking is that you have businessmen calling fellow businessmen, which is good for placement; these guys know each other well, and it is easier for them to get results."

About 70 percent of the workers hired under the JOBS Program as of February 1969 were blacks and, contrary to the CEP experience, about three-quarters were men. Nevertheless, JOBS officials report increasing difficulty in recruiting men who can qualify as being disadvantaged under Federal guidelines and suggest raising the poverty criteria.

A critical problem in the Houston JOBS Program is the low proportion of hires who stay in their jobs. The city's retention rate of only 55 percent is far below the national rate of about 73 percent for the same period, Briggs reports. He suggests that the explanation lies in the low percentage of Houston companies under direct contract with the Federal Government to defray the extra costs involved in hiring, training, and retraining participants—around 18 percent in Houston compared with about 33 percent nationally. Companies participating in the program on a voluntary basis rather than under contract may be less tolerant of poor work habits than if their costs were covered, Briggs says. Another possible explanation, he suggests, is that a disproportionate number of Houston jobs (as contrasted with national experience) are of the menial and dead-end variety.

"Since the Houston labor market—especially for men—is very tight, it is likely that the people recruited are more truly 'hard core' than in some other cities," Briggs concludes. "It is equally true, however, that many of these workers would have been hired in a tight labor market even without the JOBS Program."

An area with growing potential for changing black employment patterns is vocational education. A 1961 study by the Southern Regional Council showed that the training available to Houston blacks was severely limited, Briggs reports. They were barred from the city's only full-time vocational high school, and courses at the black schools were confined mainly to training for "traditional Negro jobs."

"The picture is far different" today, Briggs says. Although, in his view, the array of courses is still inadequate, a broad range of opportunities has opened up for black youth as large numbers entered the vocational high school and training in more skills was introduced at the other schools.

Another route to acquiring job skills is through the Texas Employment Commission's Houston Opportunity Center. It offers job assistance and referral to MDTA and other training to people outside the CEP area and residents of the area who are not disadvantaged. Its most striking contrast with the CEP center, Briggs says, is "the notable fewness of black staff members." In June 1968 it had only one.

Besides counseling, and other employment services, the Opportunity Center recruits disadvantaged youth for summer jobs. Formerly, it operated an Apprenticeship Information Center, but since no efforts were made to advertise its services, comparatively few black youth became aware of apprenticeship opportunities, Briggs reports.

In 1968 responsibility for recruiting and placing minority youth in apprenticeships was shifted to the Apprenticeship Outreach Program, which operates under contract with the Department of Labor and the Houston Gulf-Coast AFL-CIO Building and Construction Trades Council. The Outreach Program seeks to contact various black organizations to explain apprenticeship and the opportunities open to those who can qualify.

Few Blacks in Crafts

During its first 20 months of operation, the program recruited 90 minority youth (blacks, Mexican Americans, Orientals, and Indians) for apprenticeship, Briggs reports. Of these, 38 percent were later cancelled. Moreover, he says, 40 percent were in the cement masons trade, which has traditionally been open to blacks. Only 23 minority youth were added to the six mechanical trades (electricians, elevator constructors, ironworkers, operating engineers, pipe trades, and sheetmetal workers).

"Despite the continuing construction boom," Briggs says, "it is highly unlikely that blacks comprise as much as one-half of 1 percent of the combined memberships of the six mechanical trades." Since it is widely acknowledged, he says, that there are many black nonunion craftsmen as well as union laborers who could be upgraded to positions in these trades, "the need for the Outreach Program to be expanded into recruitment of black journeymen is urgent."

Manpower programs could, in Briggs' view, assume an important role in meeting the needs of both black workers and the Houston economy. "To accomplish this, however, their current operational format needs a drastic overhaul," he says. The general thrust of his recommendations for revamping manpower policy in Houston is to make it more responsive to local conditions. Specifically, he proposes that:

- The "poverty criteria" be suspended for as long as the overall unemployment rate in the area remains below 3 percent. Instead, manpower programs should serve all persons with incomes below the Department of Labor's low-cost budget figure of $5,600 for an urban family of four.
- Since the employment problems of black men and black women are different, the priorities of public policy for the two groups must be separated. For men, the policy focus should be twofold: (1) In large firms all funds should be expended for upgrading. Black men can easily obtain entry-level jobs without assistance from manpower endeavors but typically cannot advance to better jobs. Manpower programs should fill this gap. (2) On-the-job training at small firms should be expanded. The basic fact that most blacks work for small business is overlooked in current program operations.
- Black women must be trained in shortage occupations currently designated as "men's jobs." Training for traditional "women's work" that rarely leads to jobs paying a decent wage amounts to "income maintenance rather than skill endowment" and perpetuates frustration, Briggs says.

Blame for the plight of black women, Briggs contends, lies not with the training programs or their participants but with the way employment decisions are made in Houston. Attempting to place black women in "men's jobs" would directly challenge the pervasive patterns of exclusion which operate against them. Hence it might require manpower programs "to work in tandem with local EEOC officials." A joint effort, Briggs feels, is sorely needed.

"To date," he says, "there is scant evidence that manpower policy and equal employment opportunity policy are aware of each other's existence. Until they become congruent, there is little hope for the success of either." □

President Urges Manpower Revenue Sharing

Following are excerpts from President Nixon's message to the Congress on manpower revenue sharing, a proposed $2 billion program under which State and local governments would be given wide discretion to develop and operate projects to meet local manpower needs.

. . . Designing a manpower program that can best deliver its intended services starts with the recognition, one, that the "job market" is really thousands of interacting but separate markets spread all over the economic and geographic map of the United States, and two, that the "labor force" is actually 87 million individual men and women with a wide diversity of training needs. Under the circumstances it makes little sense for Washington to dominate decisions on manpower assistance—not when 50 States and thousands of local government units, each in touch with its own territory and close to its own people, stand ready to apply their know-how if Washington will only help pay the bills. . . .

Manpower is an area in which the need to adapt to diverse and changing local conditions is especially compelling, and in which the advantages of local control are correspondingly great.

When nationwide categorical programs are applied to diverse job markets, some cities and States may find their needs met nicely—but many others, inevitably, will come off second best. They will, in effect, be penalized for differing from the models according to which Federal programs are designed. They find themselves forced into funding projects of low *local* priority ahead of those of higher priorities simply because Federal program inflexibilities mean funding the available ones or none at all. Those who suffer as a result are not governmental units in the abstract but real people with bills to pay and families to feed. The injury is compounded when local funds, scarce at best, must be set aside to match—in effect, to buy into—the Federal money, if the money is not to be lost. . . .

The active Federal commitment to manpower training and development was a good idea in 1962, when Congress in enacting the Manpower Development and Training Act (MDTA) expressed concern that "the problem of assuring sufficient employment opportunities will be compounded by the extraordinarily rapid growth of the labor force in the next decade." It is an even better idea today, with the labor force already enlarged by 19 percent in the 9 years since, and with technological change still rapid. But one of the great lessons of the dramatic Federal Government growth in the 1960's is that even a good idea like this can fall short of its promise if the way in which it is carried out runs against the grain of the Federal system. By converting the Nation's manpower programs from categorical grants to special revenue sharing, we can play to the strengths of the Federal partnership, teaming Federal dollars with State and local decisionmaking. This is the purpose of the Manpower Revenue Sharing Act of 1971.

I have proposed that $2 billion be provided for the first full year of the Manpower Revenue Sharing Act, which would replace the Manpower Development and Training Act and manpower provisions of the Economic Opportunity Act on January 1, 1972. This represents an increase of almost one-third over current levels of funding for the affected categorical grants. Since the need for job training and other manpower assistance expands as the Nation grows, the act would set no ceiling on future appropriations.

Authorized Manpower Activities Listed

Of this amount provided, 85 percent would be distributed to the States and to cities and counties with a population of 100,000 or more. Since jobs and workers cross city and county lines, bonus funds within the formula distribution would be awarded to consortia of local governments which embrace entire major labor market areas. Governments which can agree to act in concert in smaller urban areas would also qualify for funds. The remaining 15 percent would be made available to the Secretary of Labor to fund special activities.

The shared revenues would be allocated by statutory formula. Each State or local area's share would be determined by its proportionate number of workers, unemployed persons, and low income adults.

Manpower programs develop job skills. They help the unemployed and underemployed, particularly welfare recipients and other disadvantaged persons, make the transition to better jobs, better pay, and higher skill levels.

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An effective program focuses on individual needs and available jobs. It embraces a wide range of manpower activities, providing combinations of services to move people toward their employment goals. Authorized manpower activities include:

- Recruitment, counseling, testing, placement, and follow-up services.
- Classroom instruction in both remedial education and occupational skills.
- Training on the job with both public and private employers, aided by manpower subsidies.
- Job opportunities, including work experience and short-term employment for special age groups and the temporary unemployed, and transitional public service employment at all levels of government.
- Ancillary services like child care assistance, relocation assistance, and minor health services.

Decisions on the mix and specifics of State and local activities under this broad umbrella would be up to each government. However, payments and allowances for individuals would be limited to 2 consecutive years, in recognition of the fact that these manpower programs are designed not to provide long-term public support but rather to assist jobseekers in making the transition to permanent or better jobs.

In keeping with the principles of special revenue sharing, State and local governments would be given wide discretion in determining how the funds provided should be used.

This manpower program, unlike its predecessors, would have no exhaustive volumes of Federal standards to be met. There would be no towering piles of Federal program applications to complete and no frustrating delays at the Federal level. State and local money now tied down by matching requirements and maintenance of effort would be freed for spending elsewhere as community priorities might dictate. . . .

To enhance public *accountability* for manpower programs, State and local governments would be required to publish a statement of program objectives and projected uses of funds each year, prior to receiving their shared revenues. These statements would include information on the area's economic and labor market conditions; targeted client groups; proposed activities; wages, allowances, and other benefits; manpower agencies involved; and the positions and salaries of the program's administrators. In addition, the statements would review the previous year's programs. . . .

To increase the information available to the public, the Labor Department would publish evaluations of program effectiveness. . . .

Manpower revenue sharing is a partnership. Washington puts up the purse and sets out the broad purposes of authorized spending, while program decisions are turned over to the statehouses, county governments, and city halls. My proposal neither mandates nor terminates any programs. It provides that the continuation, expansion, or modification of each program would be determined, as it ought to be, by the test of performance alone—and determined by the State or community which the program serves. Programs that have proved themselves in practice could be continued with the use of the Federal funds provided. Indeed many current categorical programs probably would continue and expand in response to local needs once arbitrary Federal restrictions were removed. On the other hand, programs whose past claims of effectiveness are not justified by the record deserve to be replaced by others more responsive to community needs. Vesting the program authority in governments close to the people will make it harder for programs to coast along on their momentum from year to year, and easier to tailor manpower assistance to on-the-scene realities.

The special activities financed by the 15 percent of manpower funds retained for use by the Secretary of Labor would include support and assistance for State and local programs through staff training and technical aid, through research, and through experimental and demonstration programs to develop new manpower techniques.

The Department of Labor would also maintain a compresive system of labor market information and computerized job banks to facilitate exchange of information among different areas. It would monitor State and local programs for fiscal accountability and compile comparative data on all programs to help the Congress and the public assess their effectiveness.

In addition, the Labor Department would have funds to help support certain programs which operate most effectively across State and local boundaries.

Safeguards Against Bias Included

This act, like my other revenue sharing proposals, would include rigorous safeguards against all discrimination. The legislation I am recommending stipulates that revenue shared and other funds expended by the Secretary of Labor under this act would be considered Federal financial assistance within the meaning of title VI of the Civil Rights Act of 1964.

One of the most innovative features of my proposed Manpower Training Act of 1969 was an automatic "trigger" which provided more manpower funds when the national unemployment rate rose to 4.5 percent or more for 3 consecutive months.

The Manpower Revenue Sharing Act contains a similar feature. Triggered funds would be distributed by the Secretary of Labor to areas of high unemployment to provide additional training and employment opportunities.

Under such conditions many State and local governments might choose to use these funds to create temporary public service jobs to offset the rise in unemployment.

This is an acceptable and appropriate use of triggered funds —*and* of regular shared revenues for manpower programs.

Transitional and short-term public employment can be a useful component of the Nation's manpower policies. But public employment not linked to real jobs or not devoted to equipping the individual to compete in the labor market is only a palliative, not a solution for manpower problems.

Thus, this Act would also provide *permanent* authority for public service job creation as part of an overall manpower program—but with the proviso that such jobs must constitute transitional opportunities. Within a 2-year period participants must be enabled to move into the public employer's regular payroll, or helped to obtain other public or private employment. . . . □

R&D Reports

Following is a list of recently received reports compiled under research contracts and grants from the Office of Research and Development, Manpower Administration, U.S. Department of Labor. Copies of most reports in this list may be purchased from the National Technical Information Service (NTIS), Operations Division, Springfield, Va. 22151. Send remittance with order and specify accession number (PB plus 6-digit number) given in the listing. Information on price of paper copies can be obtained from NTIS; microfiche copies are 95 cents each. Other sources are indicated for a few publications. Single copies of contract research reports are available free upon request to the Division of Research and Development, Manpower Administration, 1111 20th Street, NW., Washington, D.C. 20210.

Contracts

Opportunities For Blacks in the Profession of Engineering, by Robert Kiehl, Newark College of Engineering (PB 197065).

The Job Attitudes of Workers From Different Ethnic Backgrounds, by Raymond A. Katzell, Robert B. Ewen, and Abraham K. Korman, New York University (PB 194777).

Poor Persons in the Labor Force: A Universe of Need, by Leonard A. Lecht, National Planning Association (PB 196742).

National estimates through 1975 of numbers and characteristics of persons who could benefit from Federal manpower programs.

The Job Supervisor's Role in Neighborhood Youth Corps Programs for Out of School Youth in New York City, by Mary G. Powers and Gerald M. Shattuck, Fordham University (PB 194771).

Turnover and Training: A Social-Psychological Study of Disadvantaged Workers, by Robert P. Quinn, B. D. Fine, and Teresa Levitin, The University of Michigan (PB 194775).

State Development Agencies and Employment Expansion, by Alfred S. Eichner, Columbia University, Policy Paper No. 18, Institute of Labor and Industrial Relations, Post Office Box 1567, Ann Arbor, Mich. 48106 ($2.25).

Grants

An Input/Output Model For State Manpower Projections, by Donald A. Watson, University of Oregon (PB 193588).

British Manpower Policy and the Process of Institutional Change, by John C. Donovan, Bowdoin College (PB 194699).

Projections of Occupational Requirements For Kansas in 1980, by William Eugene Spellman, Kansas State University (PB 194743).

Participation in Adult Education and Occupational Mobility, by Laurence E. Devlin, The University of Chicago (PB 193587).

Management, Technology, and Behavior of Work Groups, by Charles A. Drake, Michigan State University (PB 196467).

A study, in one large corporation, of the impact of the technological structure of the work group on the relationship between supervisory style and the group's attitudes and behavior.

Placement of Unemployed Middle-Aged Workers in San Diego, California, by Oscar J. Kaplan, San Diego State College (PB 196644).

Entry Into the Labor Market: The Preparation and Job Placement of Negro and White Vocational High School Graduates, by Sally T. Hillsman, Columbia University (PB 196824).

The Characteristics, Education, and Earnings of Technicians, by Andrew J. Winnick, The University of Wisconsin (PB 194560).

Woman's Place: Options and Limits in Professional Careers, by Cynthia Fuchs Epstein, Columbia University, University of California Press, Berkeley, Calif. 94720 ($2.45).

A study of why so few capable women fulfill the promise of their potential and ability and how those few who do so manage it.

An Evaluation of Adult Basic Education Under the Manpower Development and Training Act in Milwaukee, Wisconsin, by Myron Roomkin, The University of Wisconsin (PB 196743).

Manpower and Technology in Bituminous Coal Mining: 1956-70, by C. L. Christenson and W. H. Andrews, Indiana University Foundation (PB 195004).

An Econometric Model of External Labor Supply to the Establishment Within a Confined Geographic Market, by Robert James Hines, Cornell University (PB 193790).

The Police Academy: A Psycho-Structural Analysis, by Richard N. Harris, Tufts University (PB 194561).

Hardcore Youth Unemployment, by Robert C. Forthman, University of California, Berkeley (PB 194738).

An Economic Analysis of Black Migration, by A. Bradley Askin, Massachusetts Institute of Technology (PB 193791).

Human-Capital Obsolescence: The Effects on Earnings Patterns of Engineers of the Expansion of Technical Knowledge, by John Stirling Haines, Jr., The University of Wisconsin (PB 194745).

A study to develop a framework for analyzing the relationship between engineers' career earnings patterns and technical advances which make their knowledge obsolete.

Personal and Behavioral Factors Affecting the Supply of the Self-Employed, by Jack H. Snyder, The University of Wisconsin (PB 193789).

A "New" Approach to Local Labor Market Analysis: A Feasibility Study, by Robert S. Goldfarb, Yale University (PB 193098).

An exploration of the feasibility of collecting data on the policies and characteristics that affect the individual firm's ability to attract and retain workers.

The Economic Determinants of Labor Supply For the Urban Poor, by C. Russell Hill, University of Minnesota (PB 194796).

An Analysis of International Differences in Noncyclical Unemployment, by Robert J. Flanagan, University of California, Berkeley (PB 194418).

Intrametropolitan Migration of Minority Groups: Residential Change in Response to Occupational Opportunities, by Jay Siegel, Stanford University (PB 195410).

Trade Unions and National Economic Policy in Western Europe and the United States, by Jack Barbash, The University of Wisconsin (PB 195405).

Determinants of Turnover in NAB-JOBS Programs to Employ the Disadvantaged, by Bertram Charles Shlensky, Massachusetts Institute of Technology (PB 195876).

Education, Training, and the Urban Ghetto, by Bennett Harrison, University of Maryland (PB 196454).

A study of labor force behavior and industrial structure in ghetto areas.

Bracero Labor and the California Farm Labor Economy: A Micro Study of Three Crops, 1952 Through 1967, by Donald Eugene Wise, Claremont Graduate School (PB 196466).

Career Patterns and Work Participation of Graduate Female Social Workers, by Dorothy Mary Chave Herberg, The University of Michigan (PB 196652).

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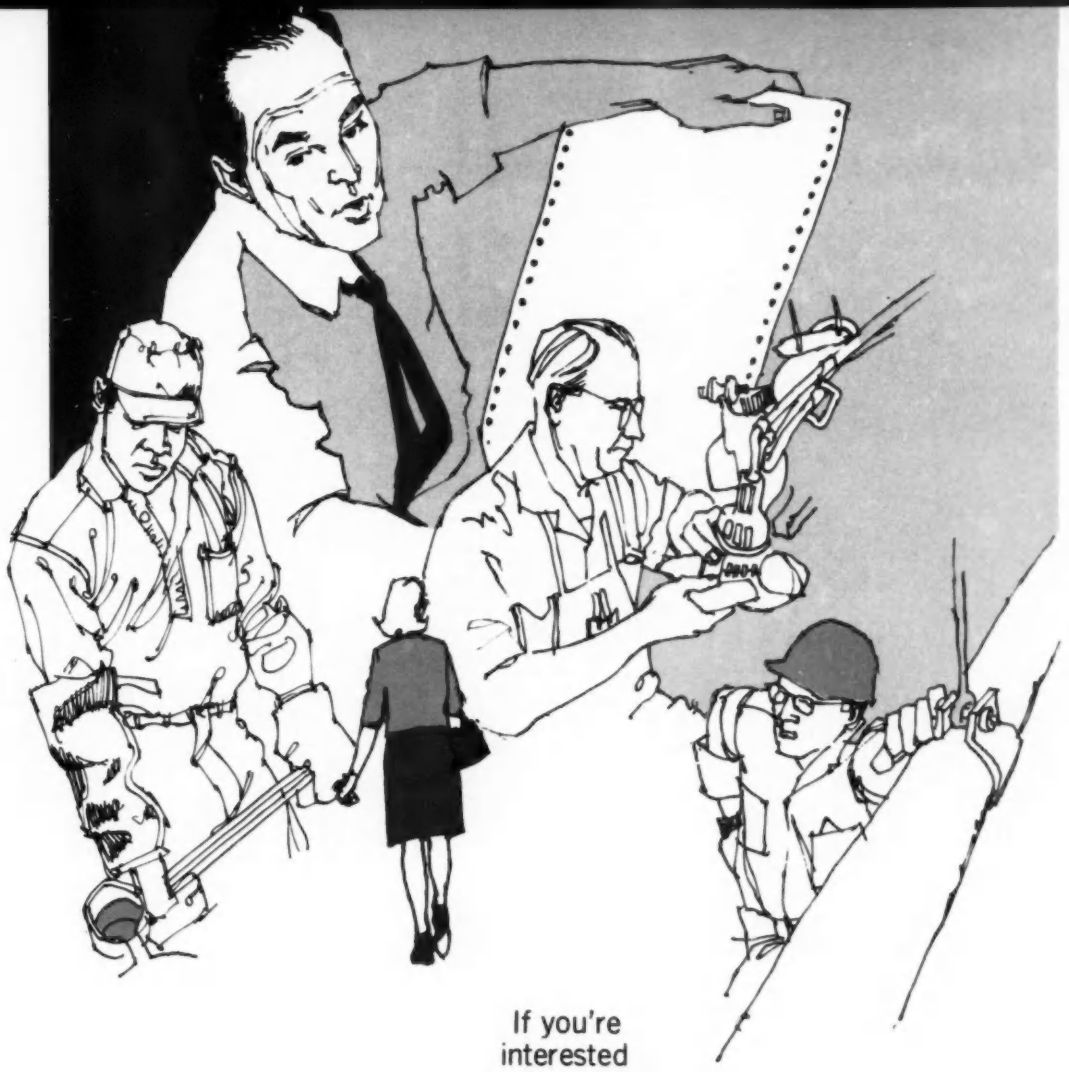

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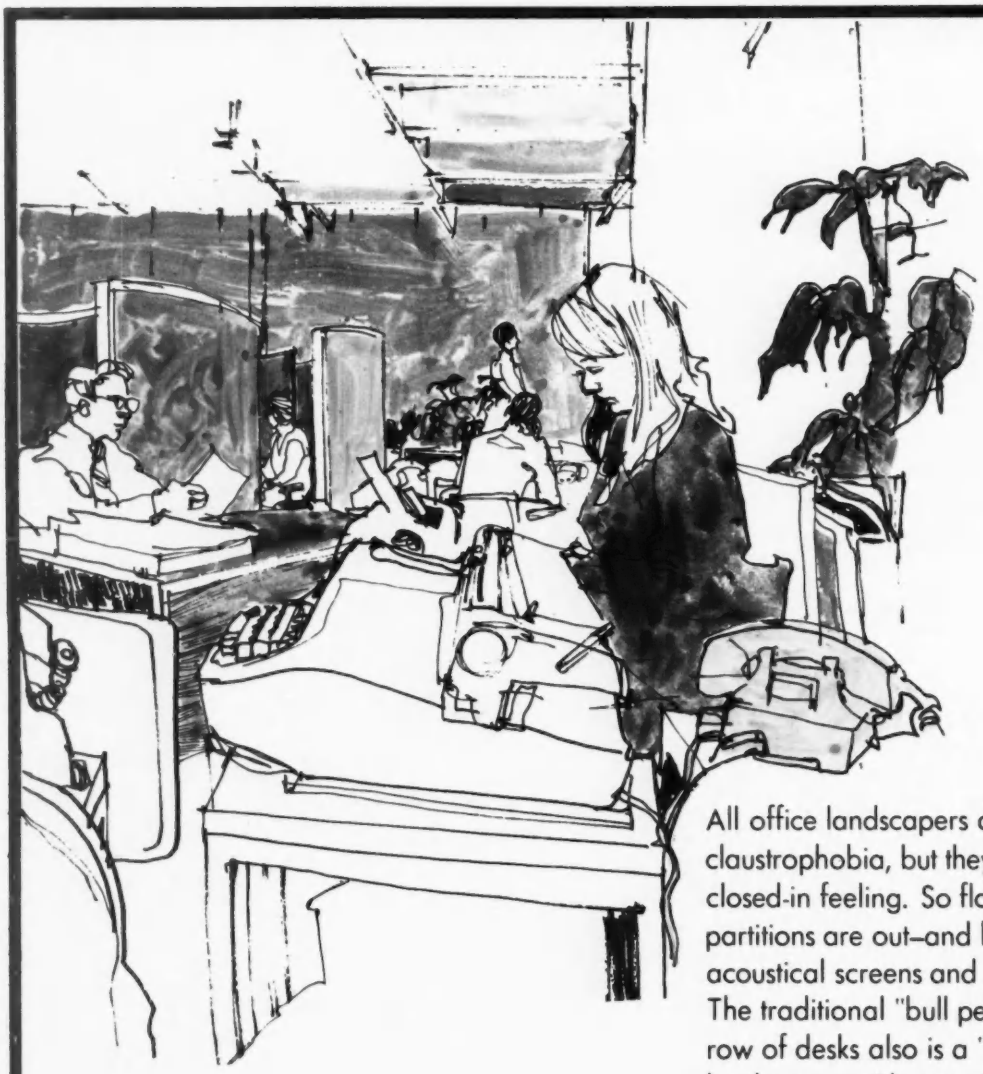

All office landscapers do not have claustrophobia, but they don't like that closed-in feeling. So floor-to-ceiling partitions are out–and brightly colored acoustical screens and live plants are in. The traditional "bull pen" or row upon row of desks also is a "no-no" to office landscapers. They prefer free-form clusters. For a more complete picture of this new approach to the white-collar workplace turn to page 20.

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